THE EMPOWERING OF TAMBON HEALTH PROMOTING HOSPITAL ROLES FOR DIABETES CARE MANAGEMENT : A CASE STUDY OF THE IMPLEMENTING CARE MODEL IN THE COMMUNITY, UBONRATCHATHANI PROVINCE

By

JURAIRAT SRISIRI

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Public Health

at Mahasarakham University

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The examining committee has unanimously approved this dissertation, submitted by Jurairat Srisiri, as a partial fulfillment of the requirements for the Doctor of Public Health degree (International Program) at Mahasarakham University.

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Jurairat Srisiri

ชื่อเรื่อง การเสริมสร้างพลังอำนาจเพื่อพัฒนาบทบาทของการส่งเสริมพลังอำนาจเพื่อพัฒนาบทบาทโรงพยาบาลส่งเสริมสุขภาพตำบลในการบริหารจัดการโรคเบาหวาน กรณีศึกษาการแปลงรูปแบบการดูแลผู้ป่วยในชุมชนสู่การปฏิบัติ ในจังหวัดอุบลราชธานี

ผู้วิจัย นางจุไรรัตน์ ศรีศิริ

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บทคัดย่อ

โรคเบาหวานเป็นโรคที่เป็นสาเหตุการป่วยอันดับที่สามของประเทศไทย การศึกษานี้แบ่งเป็น 3 ระยะ คือ ระยะที่ 1 เป็นการวิจัยเชิงสำรวจ กลุ่มตัวอย่างเป็นเจ้าหน้าที่ที่ปฏิบัติงานในโรงพยาบาลส่งเสริมสุขภาพตำบล จำนวน 300 คน จากโรงพยาบาลส่งเสริมสุขภาพตำบล72 แห่ง (ทั้งหมด 310 แห่ง) โดยการสุ่มตัวอย่างแบบง่าย เพื่อหาปัจจัยสำคัญที่มีผลต่อการนำนโยบายไปปฏิบัติ ของโรงพยาบาลส่งเสริมสุขภาพตำบล ระยะที่สองเป็นการสัมภาษณ์ เชิงลึกเจ้าหน้าที่ทุกระดับจำนวน 13 คน เพื่อยืนยันผลการศึกษาในระยะที่ 1 ส่วนระยะที่ 3 เป็นการวิจัยกึ่งทดลองเพื่อตรวจสอบประสิทธิผล ของ Tri-linked model ซึ่งผู้วิจัยได้พัฒนาและประยุกต์จากผลการศึกษาระยะที่ 1 คือ การสนับสนุน ทางสังคมร่วมกับทฤษฎีการรับรู้ความสามารถตนเอง, กิจกรรมการดูแลตนเอง,การนำนโยบายสู่การปฏิบัติในเรื่องระบบการให้บริการสุขภาพเพื่อลดภาวะแทรกซ้อนผู้ป่วยเบาหวานชนิดที่สองในจังหวัดอุบลราชธานี ผลลัพธ์ที่ได้คือระดับ ความรู้เกี่ยวกับโรคเบาหวานของผู้ป่วย, การดูแลตนเอง, การรับรู้ความสามารถตนเอง, การสนับสนุนทางสังคม, ระบบการบริหารจัดการโรคเบาหวานของโรงพยาบาลส่งเสริมสุขภาพตนเอง, ระดับน้ำตาลในเลือด รวมถึงการควบคุมอาหาร และรูปแบบการใช้ชีวิตประจำวัน โดยวัดทั้งก่อนและหลังโปรแกรม ระยะเวลาในการศึกษา มีนาคม –ธันวาคม 2554 เก็บข้อมูลโดยใช้ แบบสอบถาม และการสัมภาษณ์ การวิเคราะห์ข้อมูลทางสถิติใช้ ความถี่ ร้อยละ ค่าเฉลี่ยเลขคณิต, ส่วนเบี่ยงเบนมาตรฐาน, การวิเคราะห์ความสัมพันธ์ และ t-test

ผลการศึกษาระยะที่หนึ่งพบว่ากลุ่มตัวอย่างส่วนใหญ่เป็นผู้หญิง (ร้อยละ71.3 ผู้ชาย ร้อยละ 28.7) เกินครึ่งอายุอยู่ในช่วง 41-50 ปี (ร้อยละ 58) เกือบทั้งหมดของกลุ่มตัวอย่างแต่งงานแล้ว (ร้อยละ 65) ส่วนใหญ่จบการศึกษาระดับปริญญาตรี (ร้อยละ 85.3) ตำแหน่ง การปฏิบัติงานในระดับผู้อำนวยการโรงพยาบาล, พยาบาลวิชาชีพ และนักวิชาการสาธารณสุข มีจำนวนเท่าๆกัน (ร้อยละ 20.7, ร้อยละ 29.7, ร้อยละ 30.3 ตามลำดับ) เจ้าหน้าที่ส่วนใหญ่ยอมรับว่าการบริหารจัดการโรคเบาหวานมีความซับซ้อน, ยากในการดำเนินการ และไม่เหมาะสมกับบริบทของพื้นที่ (ร้อยละ 87) จากการวิเคราะห์ความสัมพันธ์พบว่า การสนับสนุนทางสังคมเป็นปัจจัยที่มีผลต่อความสำเร็จของการนำนโยบายไปปฏิบัติอย่างมีนัยสำคัญทางสถิติ ($p<0.01$) โดยมีค่าสัมประสิทธิ์ 0.927 (r = 0.927) สอดคล้องกับผลการศึกษาในระยะที่ 2 โดยการสัมภาษณ์เชิงลึกเจ้าหน้าที่ สาธารณสุขทุกระดับ จำนวน 13 คน พบว่าปัจจัยที่สำคัญที่สุดในการขับเคลื่อนนโยบายนี้คือการสนับสนุนทางสังคมซึ่งนำมาพัฒนาเป็น ระบบบริหาร

จัดการโรคเบาหวานในชุมชนของโรงพยาบาลส่งเสริมสุขภาพตำบลรูปแบบใหม่ ผู้วิจัยได้ประยุกต์ทฤษฎีการนำนโยบายสู่การปฏิบัติ ไปขับเคลื่อนกลไกสำคัญสามสิ่ง คือ การปรับปรุงการดูแลส่วนบุคคล (ตนเอง) การปรับปรุงสิ่งแวดล้อม (สังคม) และการปรับปรุงระบบบริการสุขภาพ (ระบบ) ซึ่งเรียกว่า Tri-linked model มาใช้ในการศึกษาระยะที่ 3โดยผลการศึกษาระยะที่ 3ซึ่งเป็นการวิจัยกึ่งทดลอง พบว่ากลุ่มตัวอย่างส่วนใหญ่เป็นผู้หญิงอายุมากกว่า 55 ปี จบการศึกษาระดับประถมศึกษา อาชีพทำนา ระยะเวลาป่วยเป็นเบาหวาน 6-10 ปี การเปรียบเทียบในด้านความรู้เกี่ยวกับโรคเบาหวาน, การดูแลตนเองของผู้ป่วยเบาหวาน, การรับรู้ความสามารถตนเอง, การสนับสนุนทางสังคม, ระบบการจัดการโรคเบาหวานของโรงพยาบาลส่งเสริมสุขภาพตำบล, ระดับน้ำตาลในเลือด, ระดับฮีโมโกลบินเอวันซี ก่อนและหลังการทดลอง และภาวะแทรกซ้อนของโรคเบาหวาน พบว่าในกลุ่มทดลองมีค่าเฉลี่ยที่ดีขึ้นมากกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติ ($p<0.01$), 80% ของกลุ่มทดลองพบภาวะแทรกซ้อนของเบาหวานลดลง ความพึงพอใจใน Tri-linked model ของกลุ่มทดลองพบว่าอยู่ในระดับปานกลางและสูง สรุปได้ว่าระบบบริหารจัดการโรคเบาหวานในชุมชนของโรงพยาบาลส่งเสริมสุขภาพตำบลรูปแบบใหม่ หรือ Tri-linked model ช่วยให้เกิดความร่วมมือของทุกภาคส่วน และใช้ทีมสุขภาพที่ไม่ใช่แพทย์ตลอดจนการเปลี่ยนบทบาทของเจ้าหน้าที่เป็นผู้อำนวยความสะดวกและให้การสนับสนุนผู้ป่วยเอาชนะปัญหาด้วยตัวผู้ป่วยเอง ซึ่งโปรแกรมนี้มีประสิทธิผลในการนำนโยบายสู่การปฏิบัติซึ่งแรกเริ่มเป็นแบบจากบนลงล่างแต่ในที่สุดถูกประยุกต์ให้สอดคล้องกับพื้นที่โดยเจ้าหน้าที่ระดับผู้ปฏิบัติ (แบบจากล่างขึ้นบน) , โปรแกรม Tri-linked model ประสบความสำเร็จใน การเปลี่ยนแปลงพฤติกรรมของผู้ป่วย และการพัฒนารูปแบบใหม่ของการจัดการโรคเบาหวานในชุมชนของโรงพยาบาลส่งเสริมสุขภาพตำบล ซึ่งช่วยลดภาวะแทรกซ้อนในผู้ป่วยเบาหวาน

คำสำคัญ : โรงพยาบาลส่งเสริมสุขภาพตำบล ; ไตร-ลิงเก็ทโมเดล ; ระบบการจัดการโรคเบาหวาน

TITLE The Empowering of Tambon Health Promoting Hospital Roles for Diabetes care management: A case study of the implementing care model in the community in Ubonratchathani Province

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DEGREE Doctor of Public Health (International Program)

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UNIVERSITY Mahasarakham University **DATE** 2013

ABSTRACT

Diabetes is the third leading cause of total life years lost among the Thai. This research consisted of 3 phases. A cross- sectional descriptive study was conducted in phase I among 300 samples from 72 Tambon Health Promoting Hospitals (total 310) with simple random sampling in Ubonratchathani province. This phase aimed to determine the influential conditions of the Tambon Health Promoting Hospitals for policy implementation. Phase II, in-depth interview in 13 health personnel at all levels. This phase was conducted to confirm the influential conditions from phase I. Phase III, a quasi-experimental study aimed to identify the benefits of using the Tri-linked model which was developed and applied the result of phase I focusing on social support, self-efficacy, self-care activities and Tambon Health Promoting Hospital policy implementation for health service system to decrease the Diabetes complication among type 2 diabetic patients in Ubonratchathani Province. The outcome of the implementation was assessed in terms of level of knowledge on Diabetes among participants, self-care activities, self-efficacy, social support, Diabetes management system of Tambon Health Promoting Hospital, fasting plasma glucose level, and Hemoglobin A1c before and after the program. In addition, dietary intake and change in life styles pattern had been observed. The study was conducted from March to December, 2011. Data were collected using questionnaire interview. Both descriptive and inferential statistics including frequency, percentage, mean, standard deviation, Pearson correlation, t-test were used for analysis.

The results from a cross-sectional survey revealed that most of the participants were females (71.3 %), aged between 41 – 50 years old (58 %), married (65 %), bachelor degree graduates (85.3 %). There was similar proportion of positions of directors, public health staff and register nurse (20.7 %, 29.7%, 30.3 % respectively). Most of health personnel perceived Diabetes management was complicate, hard to implement and was not fit the local context (87%).Pearson correlation indicated that social support was highly positive correlation with Tambon Health Promoting Hospital policy implementation on Diabetes management in community ($r = 0.927$, $p< 0.01$). It was congruent with In-depth interview of 13 Tambon Health Promoting Hospitals health personnel at all levels. The most important set of variables to drive this policy was social support that was developed to be the new Diabetes management in community system of Tambon Health Promoting Hospitals. Therefore researcher applied policy implementation theory to drive the important dynamic of individual improvement (self), environment improvement (social) and service delivery system improvement (system), namely Tri-linked model to be the intervention in phase III. The result from Quasi-experiment in phase III illustrated that the majority of the participants were females, aged $\geq$ 55 years, graduated primary school, were farmers, and had been diagnosed as Diabetes for 6-10 years. Comparison of Diabetes knowledge, self care activities, self-efficacy, social support, Diabetes management system of Tambon Health Promoting Hospital, Fasting plasma glucose, and Hemoglobin A1c before and after intervention showed improvement of Diabetes knowledge, self care activities, self-efficacy, social support, Diabetes management system of Tambon Health Promoting Hospital, Fasting plasma glucose, and Hemoglobin A1c in the intervention group when compared to the comparisons. The mean scores of Diabetes knowledge, self care activities, self-efficacy, social support, Diabetes management system of Tambon Health Promoting Hospital in the intervention group was statistically significant higher than for the comparisons at the 12^{th} week. In addition, mean Fasting plasma glucose levels and Hemoglobin A1c of the intervention group were statistically significant lower than for the comparison group at the 12^{th} week ($p< 0.01$).80% of experimental group had Diabetes complication decreasing. The satisfaction of the members of the intervention groups was moderate and high.

It can be concluded that the new Diabetes management in community system of Tambon Health Promoting Hospital or Tri-linked model program facilitated

collaboration of all sectors, using non-MD team, change the roles of health personnel to be the facilitators to support and encourage the patients overcome their barrier by themselves. This program affected policy implementation of which at the beginning was top-down, but finally, It was applied according to the real situation by local implementers (bottom –up). This Tri-linked model resulted in successfulness in term of patient behavioral modification and development of Diabetes management in community of Tambon Health Promoting Hospital which could reduce complications.

Key Words : Tambon Health Promoting hospital ; Tri-linked model ;
Diabetes management system.

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CHAPTER I

INTRODUCTION

1.1 Background and rationale

1.1.1 Diabetes mellitus and Complications

Diabetes mellitus (DM) represents one of the most important challenges facing health care systems. Coupled with the increase in the prevalence and incidence of DM is an increasing burden of death and disability associated with DM. The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030 (World Health Organization and International Diabetes Federation, 2004).The latest figures from the International Diabetes Federation revealed that currently 366 million people have diabetes and 4.6 million deaths are due to diabetes. The number is expected to rise from 366 million in 2011 to 552 million by 2030, The most significant, demographic change to diabetes prevalence across the world appears to be increasing in the proportion of people between 40 to 59 years of age. (International Diabetes Federation, 2011).The rapid global rise in diabetes occurs more than estimation because of population growth and ageing, and because of increasing trends towards an unhealthy diet, obesity, and sedentary lifestyles**.**

Heart disease accounts for the majority of diabetes-related deaths because people with DM exhibit heart disease at two to four times the rate of those without DM. DM women are disproportionately affected and exhibit an age-adjusted risk of cardiovascular disease similar to that of men with DM. Vascular diseases in general, including stroke and peripheral vascular disease, account for more than 65% of deaths among diabetes.(Center for Disease Control and Prevention, 2005). Microvascular complications of DM, such as, eyes, kidneys, and nerve diseases, contribute substantially to the burden of disability. DM is the leading cause of new cases of blindness among adults age 20-74 years. WHO has estimated that diabetic retinopathy is responsible for 4.8% of the 37 million cases of blindness throughout the world, or DM are 20 times more likely to develop blindness than non-diabetics. (WHO, 2005) . Diabetes is the leading cause of end-stage renal disease, accounting for 44% of new cases in the United

States. In 2001, more than 42,000 people with DM began treatment for end-stage renal disease and more than 140,000 DM patients were maintained on chronic dialysis or with a kidney transplant. (Center for Disease Control and Prevention, 2003). Most studies suggest that 60% of patients with a 20-year history of either type 1 or type 2 diabetes have one or more forms of diabetic neuropathy associated a wide range of symptoms. (Apfel, 1999; Feldman, 2001). Severe peripheral neuropathy is the major contributor to diabetic foot ulcers and amputations; the majority of non trauma-related lower-limb amputations are performed annually among DM patients. Amputations are at least 10 times more common in people with diabetes. (WHO, 2005). The death rate is as high as 50% at three years after diagnosis of overt autonomic neuropathy (King's Fund Policy Institute Report, 1996). Musculoskeletal disorders associated with decreased mobility and pain are more common in DM patients than in the general population.(Crispin, 2003) DM is even associated with an increased risk of many forms of cancer as well as overall cancer mortality.(Jee, 2005) .In the elderly, DM is associated with double the risk of dementia than in the general population.(Enggelgau, 2004) The severity of cardiovascular complications in diabetes accounts for about 70% of all deaths in patients with diabetes (Laakso, 1999) and diabetics are 2 to 4 times more likely to have a stroke or die of heart disease than non-diabetics. (Khaled, 2010) , the risk of cardiovascular mortality is two to three times higher in men and three to five times higher in women with diabetes than in non-diabetic subjects (Barrett-Connor EL, 1991). It has been established in a more recent report that heart disease is the leading cause of diabetes-related deaths in the United States alone (CDC, 2005)

The costs of DM care in US was approximately $132 billion. The direct medical costs of DM attributable to the disease and its complication were estimated to be $ 92 billion, with an additional $40 billion in indirect costs due to disability, work loss, and premature mortality.(CDC, 2002; 2003) This estimated is certainly a substantial underestimate because it omits costs incurred in persons with undiagnosed DM., intangibles such as pain and suffering, the cost that provided by family members and friends, and spending for other health care services. (Hoggan, 2003). In fact, approximately 25% of the total Medicare budget is used for the treatment of DM and its complications (Finkelstein, 2003; 2004). Currently, overall health care cost for global DM patients are US$ 465 billion; 11% of total healthcare expenditures in adults

(20-79 years) (International Diabetes Federation, 2011). Diabetes has become the leading causes of morbidity and mortality among Thai people. Such an increasing trend results from unhealthy consumption behaviors and physical inactivity, as evidently demonstrated by the following hospital admission rates. The admission rate per 100,000 population of Diabetes also rose from 33.3 in 1985 to 91.0 in 1994 and 736.5 in 2009 (MoPH, 2009)

The prevalence of diabetes of age 15-59 in Thailand increased from 4.6 % in 1997 to 5.6% in 2004 and to 6.9% in 2009, the prevalence of diabetes in men was 6.0%, women 7.7 %. The diabetes type I was 1% of all diabetes, the diabetes type II with insulin injection was 10% of all those diabetes type II (MoPH,2009)

Death rate of diabetes was 12.3 per 100,000 population (7,665 cases), men was 9.5 per 100,000 population (2,941 cases) and women was 15 per 100,000 population (4,724 cases). Ratio of men: women equaled 1: 16

Morbidity rate of diabetes was 444.16 per 100,000 population (247,165 cases), in the northern region was 422.02 per 100,000 population (50,496 cases), in the north-eastern region was 441.97 per 100,000 population (90,710 cases), in the central area region was 501.10 per 100,000 population (73,624 cases) and in the southern region was 381.93 per 100,000 population (32,335 cases). Ratio of northern: north-eastern: central: southern equaled 1.10: 1.16: 1.31: 1 (MoPH, 2005).

Recently, the overall resources allocated to health care have markedly increased. The total health expenditure has steadily increased, at a faster rate than the growth of the gross domestic product (GDP). In 2007, the total health expenditure equaled 3.5% of the GDP, of which a higher proportion (64.4%) was covered by the public sector rather than by the private sector (35.6%) (MoPH, 2004)

According to surveys on the registered diabetes patients in Ubonratchathani Pprovince,2006, it was revealed that the number of diabetes patients was 30,694 cases and it had a rising trend. The risk group who had FBS 100-125 mg/dl 9.49% or 49,000 cases .The Behavioral Risk Factor Surveillance System report (BRFSS) between 2004 - 2005 conducted by the Center for Chronic disease information, MoPH found that the prevalence of diabetes rose from 3.53 per 100,000 population to 4.8 per 100,000 population in 2005, and the estimated population was 61,355 cases, with prevalence in the women group, compared to the men group.

Besides, morbidity rate of diabetes had also a rising trend .It rose from 10.25 per 100,000 population in 2005 to 13.89 per 100,000 population in 2007 and 14.06 per 100,000 population in 2009

Moreover, the rate of hospitalizations of patients with diabetes had a rising trend; the admission rate per 100,000 population rose from 345.47 per 100,000 population in 2004 to 606.93 per 100,000 population in 2006, and to 716.30 per 100,000 population in 2007

Also, the crude mortality rate of diabetes had also a rising trend .It rose from 13.33 per 100,000 population in 2003 to 15.24 per 100,000 population in 2006 and 20.66 per 100,000 population in 2007

Besides, Blood sugar controlling in diabetes patients in Ubonratchathani was 7.1., representing half proportion of the whole country (Thailand). (Table 1.1)

Table 1.1 Comparison of Blood sugar controlling in diabetes patients between Ubonratchathani Province and whole country

Area	Percent
Thailand	17.0
Ubonrachathani	7.1

Source: Ubonratchathani Provincial Public Health Office.

The most diabetes complication in Ubonratchathani was diabetic nephropathy, 56%, followed by diabetic retinopathy (17.5%) (table 1.2)

Table 1.2 Percent of diabetes complication, Ubonratchathani Province, 2007

Complication	Percent
Diabetic retinopathy	17.5
Diabetic	56.0
Myocardial infarction	4.33
CVA	4.04
Foot ulcer	1.97

Source: Ubonratchathani Provincial public health office.

Besides, the medicine cost per visit of diabetes patients in community hospital in Ubonratchathani has steadily increased. The medicine cost per visit of diabetes patients rose from 122.55 baht per visit in 2004 to 150.59 baht per visit in 2006 and to 228.71 baht per visit in 2008. (Figure 1.1)

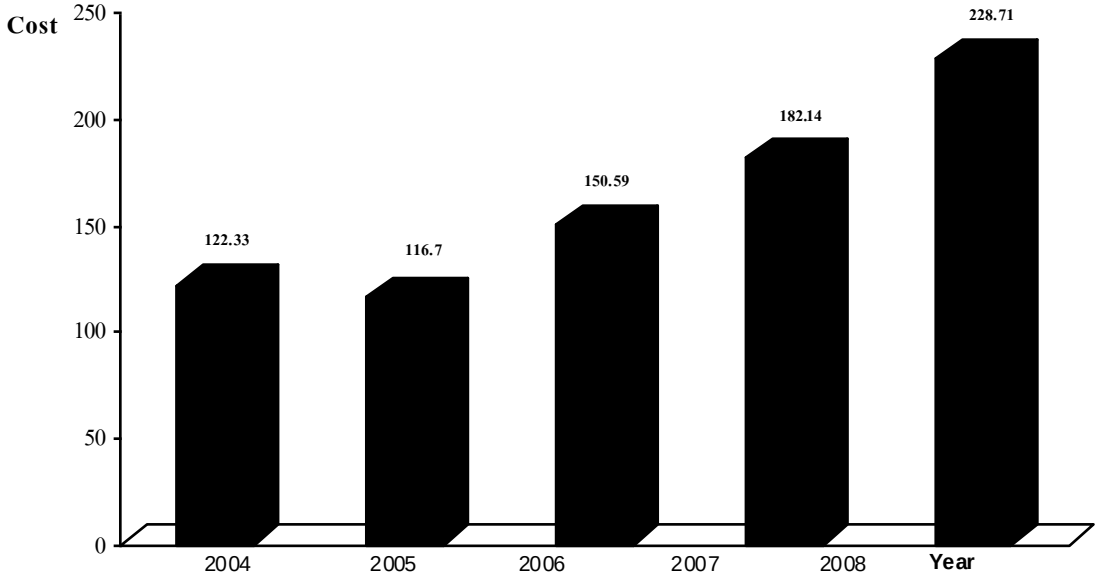


Figure 1.1 Medicine cost per visit of diabetes patients in community hospitals, Ubonratchathani Province

1.1.2 Diabetes care management system in community

The Diabetes care in community is provided by primary care level; Health center, Primary Care Unit (PCUs), Community Medical care Unit (CMU). The health personnel ran DM program according to the standard operational procedures established by the MoPH, under the technical supervision and support of the community hospital. The DM program is illustrated as in figure 1.2 (in theory) and figure 1.3 (in practice)

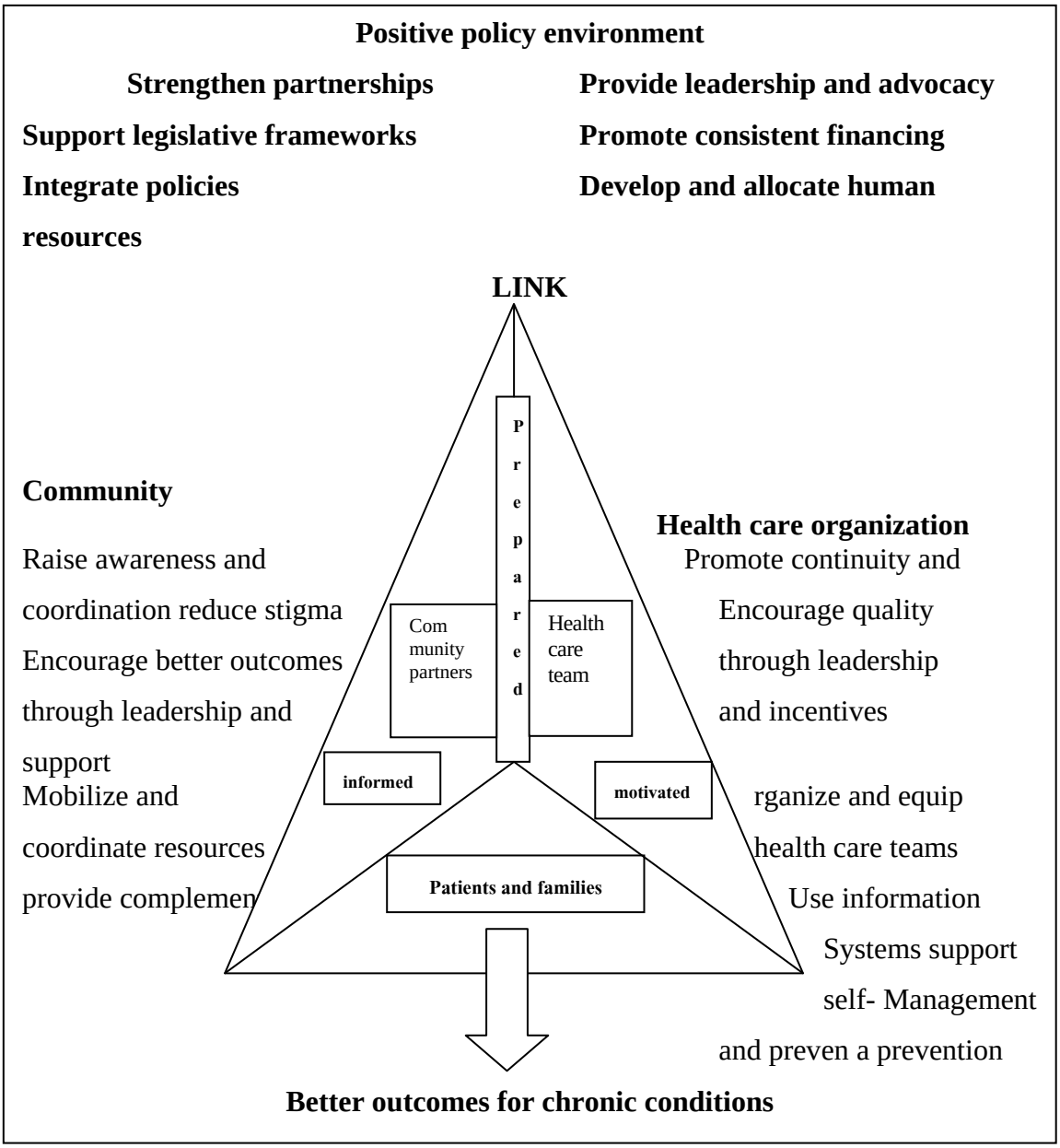


Figure 1.2 Diabetes care service system in community of THPH (in theory).

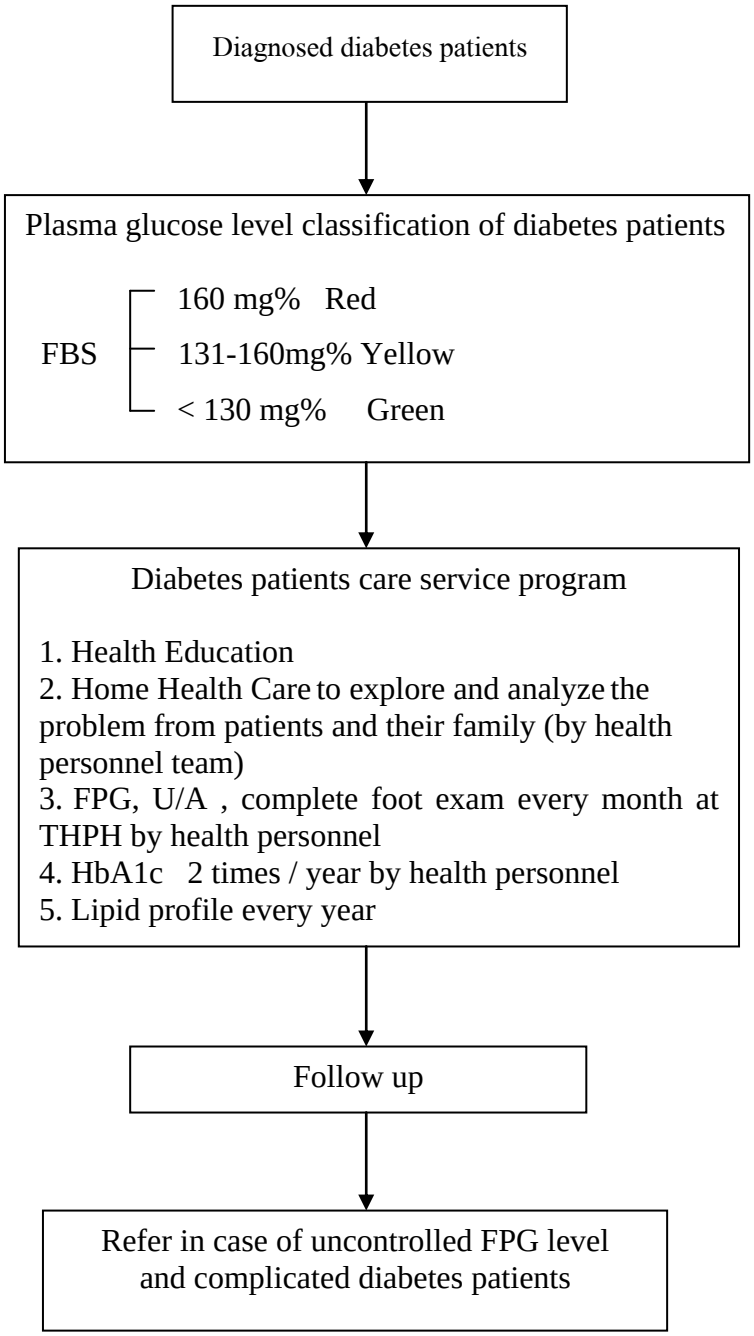


Figure 1.3 Diabetes care service system in community of THPH (in practice)

At present, The Tambon Health Promoting Hospital(THPH) have been established to provide basic or primary care to the people, with a linkage in a holistic manner as well as referral system with higher-level of health care facilities. THPH is one of the government health policies. It was top-down policy that challenged the implementers at all levels to perform, and achieve its intended objectives.

Previously, The Ministry of Public Health tried to develop the potential of primary care in order to be the first place where people should go to when they have health problems. In other words, people should have easily access the quality health care services. It was called under various names, such as, PCU (Primary Care Unit), CMU (Community Medical Unit) etc., and eventually, the Tambon Health Promoting Hospital (THPH).

The concept of the Tambon Health Promoting Hospital (THPH) is proposed to solve the severe health problems as above. The THPH policy was introduced by pilot project in April 2009 and it was expanded to1,001health centers on September 2009 (MoPH, 2009) This policy is imposed by the government; in other words, it is top-down implementation policy. It is presented as the innovation of primary care developing in various settings, for example, the Lomsak Tambon Health Promoting Hospital, the Srithan Tambon Health Promoting Hospital, The Siprasarn Tambon Health Promoting Hospital, Ratchaburi province.This idea is congruent of the health policy of present government. The Health policy states that:

1. To develop health care service delivery at all levels and upgrade health centers to be the Tambon Health Promoting Hospital (THPH), especially, to enhance chronic disease management in community of health personnel.

2. To encourage Tambon Administrative Organization (TAO) in participation to health personnel production.

3. To devel op infrastructure and medical equipment of the Tambon Health Promoting Hospital(THPH).

Moreover, community hospitals, general and regional hospitals are expected to closely coordinate for effective care and continuity. The participation of all stakeholders is requested for quality of life. (Prakongsai, 2009)

Thailand has 9,810 health centers with a personnel average of 2.9 persons / health center. In 2009, the Tambon Health Promoting Hospital has 1,001 locations, within 2012, there will be 4,500 places, and in 2019 all of health centers will be the full option of Tambon Health Promoting Hospital. After the THPH policy was performed, some THPHs achieved their intended objectives, but some THPHs could not conduct in full option. However, because of THPH is the new health policy and will be conducted

in short time, it has not been prepared to perfection. As a result, there are diverse opinions that indicated as follows:

The contrary group argued that even though the government policy clearly states that the main objectives of the Tambon Health Promoting Hospital is the health promotion in the community rather than treatment, the government funded the infrastructure and medical equipment aimed for treatment . This policy might be not sustained and could not achieve its intended objectives. (Chunharasmee, Kornsilp, Thamrongwarangkul, 2009), while the promontory group argued that treatment is the method to win the trust from the community in primary care while health promotion is paralleled. Finally, this policy will be successful. (Sriluk,Wongmanee, 2009)

1.1.3 Pre-survey

Ubonratchathani province is the third largest provinces of north –east of Thailand. There are 319 health centers. The population within their responsibility are around 3,000-20,000 population with a personnel average of 2.5 persons/health center.

According to a pilot study performed in December 2010 for causes analysis, in-depth interview and focus group discussion were used to study about socio-demography, Opinion of THPH policy and health personnel's attitude of THPH policy. The finding as follows:

1. The 30 THPH health personnel at one of 25 districts in Ubonratchathani province, it was found that most of the respondents were females (80% and 20% males), approximately half were aged 41-50 years. The majority of them were Bachelor degree graduates (70 %). For position of the number of directors, Public health Scholars and RNs were alike (20 %, 24.7%, 25. % respectively) and Length of working of less than 10 years, 11-20 years and more than 20 years were alike (35%, 34.7%,30.3% respectively).

2. The health personnel gave their opinion about THPH policy as follows:

2.1 Understanding of the THPH policy: The health personnel at all levels of THPH (65 %) did not clearly understand the THPH concept, and most of them thought that it is similar to the previous concepts, such as, PCU, CMU. But, THPH was supported with a greater budget by government than before.

2.2 Resources: 80% of the health personnel realized that the resources were sufficient. The health personnel were divided in two sections, primarily full time. Secondly, part time that was supported by Contracting Unit for Primary Care (CUP).

The government, through the Ministry of Public Health and National Health Service Office (NHSO), directly allocated budget to THPH for the health facilities, medical supplies, and equipment. Although the budget is sufficient, it was rather late.

2.3 Organization: 75% of the health personnel agreed that this policy was little changed compared to the previous policy. Therefore, it was not difficult to perform.

2.4 Social support: 90% of health personnel realized that every sector in community was excited and paid more attention to have THPH. They supported both funding and labor for THPH.

3. Attitude of the health personnel: 85% of the health personnel had a good attitude towards this policy because the government supported all of infrastructure, health manpower, budget, and other support more than the previous policy.

4. Collaboration of the patients: 90% of the patients realized that they want to control plasma glucose level in order to prevent complications. They try to take care of themselves according to health personnel suggestion. But, the fasting plasma glucose level did not decrease because they did not know how to control it.

5. Diabetes care management system in community

The Ministry of Public Health created the chronic care management system for THPH to perform in the same way throughout the country. But, most of health personnel (87%) gave their opinion that it was too sophisticate to perform and too difficult to conduct in the real situation because of the differences in each area. Moreover, DM has a rapid increasing trend in the community. Besides, it was found that Percentage of complications was high all of THPH (Table 1.3)

Table 1.3 The percentage of complication in Diabetes of four THPHs, Ubonratchathani Province

THPH name	Number	Percent
Tungkasem	87	60.5
Kor	75	58.0
Huikayung	95	76.8
Tungbon	84	63.2

Source: Report 504

As the result of pre-survey above, it was found that the understanding of THPH policy and DM care management were the causes of this problem. Therefore, it is the interest of the researcher to study the successful conditions of THPH policy implementation and develop the proper DM care management system for THPH according to local needs. The suitable DM care management system should prevent or delay the onset of both DM and its complications

1.2 Research Questions

How to develop diabetes care management system in the community for Tambon Health Promoting Hospital (THPH) to decrease complication in diabetes patients.

1.3 Purposes of the research

1.3.1 General purposes.

To develop diabetes care management system in the community for Tambon Health Promoting Hospital (THPH) to decrease complication in diabetes patients.

1.3.2 Specific purposes

1.3.2.1 To find out the successful conditions of the Tambon Health Promoting Hospital (THPH) that influenced on diabetes care management system in the community

1.3.2.2 To develop a model from those influential conditions to be the proper program for diabetes care management system in the community in order to decrease complication in diabetes patients.

1.3.2.3 To examine whether the program has an effect on decreasing complications in diabetes patients. Research idea, research questions, and research objectives were illustrated as in table 1.4:

Table 1.4 Research questions and objectives

Research Idea	Research question	Research objectives
How to decrease chronic disease problem in the community.	How to develop diabetes care management system in the community for the Tambon Health Promoting Hospital (THPH) to decrease complications in diabetes patients.	1. To find out the successful conditions that influenced the policy implementation of the THPH for Diabetes care management in the community 2. To develop model from those influential conditions to be the proper program for diabetes care management system in the community in order to decrease complication in diabetes patients. 3. To examine whether the program has an effect on decreasing complication in diabetes patients.

1.4 Hypotheses

1.4.1 After the program, the experimental group have better self-care behavior and there are reduction in the levels of fasting plasma glucose (FPG), HbA1c level and DM complication than before the program.

1.4.2 After the program, the experimental group have better self-care behavior and there are reductions in the levels of fasting plasma glucose (FPG), HbA1c level and DM complication than in the comparisons.

1.5 Scope of the research

This research aimed to study the effects of the Tri-linked model (TLM) which study on the properly self-care behavior of DM patients of type 2 diabetic patients who

attended diabetic clinics at the Tambon Health Promoting Hospital (THPH) in Ubonratchathani Province. The study was conducted from March to December 2011.

1.6 Variables

1.6.1 Independent Variables: The Tri-linked Program (TLM) including:

1.6.1.1 Individual improvement of DM knowledge and skills for self-care Activities.

1.6.1.2 Environmental improvement: Social support or care collaboration of Family and community.

1.6.1.3 Health care delivery system improvement (THPH DM management System)**.**

1.6.2 Dependent Variables:

1.6.2.1 Behavior

1.6.2.2 Individual laboratory indicators

1.6.2.3 DM management system in community

1.6.2.4 DM complication

1.7 Operational definition

1.7.1 The Tri-linked model (TLM) refers to the intervention introduced to enhance proper self-care behavior of DM patients (Diet controlling, physical exercise, medication, and complication observation)by applying the social support, the most influential condition of THPH policy implementation, and self efficacy. It consists of these activities: individualized feedback about DM, DM knowledge class**,** daily self-report**,** home visit, individual counseling, and monthly exchange experiences class.

1.7.2 The Tambon Health Promoting Hospital (THPH) is upgraded from health center, primary care unit or community medical care unit for capacity building of primary care level to develop holistic care, health promotion, and solving health care service delivery problem.

1.7.3 Chronic diseases refers to conditions or diseases that are not cured once acquired and long duration must have been present for 3 months or longer.

1.7.4 Diabetes Mellitus is a clinically and genetically heterogeneous group of disorders characterized by abnormally high levels of glucose in the blood.

1.7.5 Type 2 Diabetic patients refers to patients aged 30-59 years, who were diagnosed by medical doctors as suffering from type 2 diabetes mellitus and receiving treatment by oral glycemic medication for controlling blood sugar levels.

1.7.6 Policy refers to a range of action, laws, regulations, official guidance and administrative guidelines.

1.7.7 Policy process is composed of agenda setting, policy formulation, policy Implementation, and policy evaluation.

1.7.8 Policy implementation is a process of interaction between the setting of goals and actions geared to achieving them.

1.7.9 DM care management is composed of continuity of care, home visit, medication, nutrition, physical exercise, referral system, and prevention of complications.

1.7.10 The influential conditions refers to a description of the major skills and resources required to be successful in policy implementation of the THPH policy.

1.7.11 Primary Care is provided by health personnel and general practitioners (GPs), including those services provided in health centers, primary care unit (PCU), and community medical care unit (CMU). And, in general, there are no holistic care services at the family level. The universal coverage of health care policy of the present government aims to develop a holistic primary care system for all families across the country.

1.7.12 Fasting plasma glucose (FPG) refers to levels of monosaccharide glucose dissolved in the blood. Blood glucose concentration in healthy people, after an overnight fast, will normally be lower than 100 mg/dl, and this is referred as normal blood glucose. A person would be diagnosed as having pre-diabetes if his/her blood glucose after an overnight fast falls from 100-125 mg/dl, and as diabetes if 126 mg/dl and above (Department of disease Control, Ministry of Public Health,2005)

1.7.13 HemoglobinA1c (HbA1c) refers to a marker of long-term glycemic control in patients with diabetes mellitus (DM), and it is directly related to the risk of diabetic complications. Lowering HbA1c close to the normal range has been associated with a markedly decreased frequency and extent of micro vascular and neuropathic complications in diabetic patients. Various diabetes associations have advocated HbA1c

targets below 7% or 6.5%. (American Diabetes Association, 2009; European Association for the Study of Diabetes, 2007). This study used HbA1c target below 7% according to MoPH guideline

CHAPTER II

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This chapter presented an integrative review of theoretical and empirical literatures and empirical literature describing the concepts of interest and interrelationship among them. The following review of literature focused on studies that were relevant to this research. Eight topics were included as follows:

1. The health policy process
2. The Tambon Health Promoting Hospital (THPH)
3. Self efficacy
4. Social support
5. Chronic diseases
6. Diabetes Mellitus (DM)
7. Related researches
   7.1 Health policy
   7.2 Social support and self efficacy

2.1 The health policy process

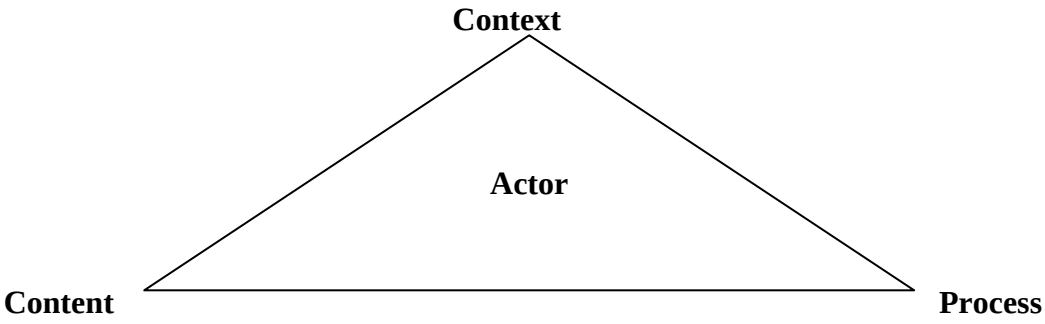
Policy can itself be defined in many different ways, in the literature the term ‘policy’ to has been used to refer to a range of related matters, including expression of purpose or intent, decisions, government alternative guidelines, courses of action, laws, regulations, official guidance and administrative guidelines (Walt, 1994 ; Koenig, 1976 ; Hogwood and Gunn, 1984 ; Dye, 1966 ; Caldwell, 1970 ; Lasswell and Kaplan, 1970 ; Sharkansky, 1970 ; Jacob, 1966 ; Greenwood, 1965 ; Easton, 1953). Although, there is no single definition of ‘policy’, one shared element in many definitions is that policy is not simply about intent but involves arriving at a working consensus that will allow planned changes to impact on the health care system, or other social systems that affect health (Barker, 1996 ; Walt, 1994). The point here is that policy is not only an initial ‘idea’ or ‘blueprint’, but also the steps that are taken to put the initial idea into effect, and the changes in the idea that may occur as this process unfolds.

There are many definitions of policy, with implications for this study. It can be useful to think of health policy as embracing ‘courses of action (and inaction) that affect the set of institutions, organizations, services and funding arrangements of the health system ’ (Busse et al., 2004)

In short, health policy is a set of (hopefully evidence-based or at least experience based) courses of action intended to achieve the health objectives of a group, society, etc.

Walt and Gilson (1994) presented a model for health policy analysis that has four dimensions of policy that affect development and implementation as follow:

1. Content what the policy states
2. Context the environment in which the statements were made
3. Process the steps involved in developing the policy
4. Actors individuals and groups involved in developing the policy



Source:Walt, G and L Gilson (1994)

Figure 2.1 Basic framework for policy analysis: the policy triangle

The most influential frameworks for understanding the policy process – particularly among American scholars –has been the “stages heuristic”, or what Nakamura (1987) termed the “text book approach”, as developed by Jones (1970), Anderson (1975), and Brewer and Deleon (1983), it divided the policy process into a series of stages – usually agenda setting, policy formulation and legitimating, implementation and evaluation-and discussed some of the factors affecting the process within each stage. The stages heuristic served a useful purpose in the 1970s and early 1980s by dividing the very complex policy process into discrete stage and by stimulating

some excellent research within specific stages – particularly agenda setting (Cobb, Ross and Ross, 1976 ; Kingdon, 1984 ; Nelson, 1984) and policy implementation (Pressman and Widavsky,1973 ; Hjern and Hull, 1982, Mazmanian and Sabatier, 1983). Various authors have outlined a number of stages in the development of policies. (Lasswell, 1956 ; Jenkins, 1978 ; Lindbolm, 1980; Anderson et.al, 1984; Hogwood and Gunn, 1984; Walt, 1994; and Barker, 1996).In an attempt to clarify the policy process, the stages of policy development are summarized in the following table 2.1

Table 2.1 Stages of policy development

AUTHORS	STAGES OF POLICY DEVELOPMENT
Lasswell 1956	1. Intelligence 2. Reccomendations 3.Prescription 4. Invocation 5. Application 6. Appraisal 7. Termination
Jenkins 1978	1.Initiation 2. Information 3. Consideration 4. Decision 5.Implementation 6. Evaluation 7. Termination
Lindblom 1980	1. Policy Formation 2. Policy preparation 3. Policy formulation 4. Policy implementation 5. Policy evaluation
Anderson et.al 1984	1. Ploblem or policy formation or policy agenda 2.Policy formulation 3. Policy adoption 4. Policy implementation 5. Policy evaluation
Hogwood and Gunn 1984	1. Deciding to decide 2. Deciding how to decide 3. Issue definition 4. Forecasting 5. Setting objectives and priorities 6. Option analysis 7. Policy implementation, monitoring and control 8. Evaluation and review 9. Policy maintenance 10. succession and termination.
Walt 1994	1. Problem identification / issue recognition 2. Formulation 3. Implementation 4.Evaluation
Barker 1996	1. Issue definition 2. Setting objectives 3. Priorities setting 4. Defining options 5. Options appraisal 6. Implementation 7.Evaluation

Sources Leethongdee (2007)

In short, the stages of policy development processes are similar and all of these author are no conflicts between the identified stages of policy development. As a result, the stages of policy development compose of agenda setting, formulation, implementation and evaluation.

In the past decade, however, the stages heuristic has been subjected to some rather devastating criticisms (Nakamura, 1987; Sabatier, 1991; Sabatier and Jenkins-Smith, 1993):

1. It is not really a causal theory since it never identifies a set of causal drivers that govern the process within and across stages. Instead, work within each stage has tended to develop on its own, almost totally without reference to research in other stages. In addition, without causal drivers there can be no coherent set of hypotheses within and across stages.

2. The proposed sequence of stages is often descriptively inaccurate. For example, evaluations of existing programs affect agenda setting, and policy formulation/ legitimating occurs as bureaucrats attempt to implement vague legislation (Nakamura, 1987).

3. The stages heuristic has a very legalistic, top-down bias in which the focus is typically on the passage and implementation of a major piece of legislation. This focus neglects the interaction of the implementation and evaluation of numerous pieces of legislation – none of them preeminent within a given policy domain (Hjern and Hull, 1982; Sabatier, 1986).

4. The assumption that there is a single policy cycle focused on a major piece of legislation oversimplifies the usual process of multiple, interacting cycles involving numerous policy proposals and statutes at multiple levels of government. For example, abortion activists are currently involved in litigation in the federal courts and most state courts, in new policy proposals in Washington and most states, in the implementation of other proposals at the federal and state levels, and in the evaluation of all sorts of programs and proposed programs. They're also continually trying to affect the conceptualization of the problem. In such a situation which is common focusing on “a policy cycle", this makes very little sense. The conclusion seems inescapable: The stages heuristic has outlived its usefulness and needs to be replaced with better theoretical frameworks. Parsons (1995) is more sympathetic to the ‘stages’ approach , she argued that it provides a way of analyzing the multiplicity of contextual factors that affect decisions doing the policy process and provides a useful way of conceptualizing what influences enter the picture at different steps along the road from policy idea to rollout and evaluation. Hill and Hupe (2002) see the stages framework as a heuristic that can be useful as long as it is not applied too rigidly to what are likely to be complex and messy real world events.The approach applied in this thesis holds that the content of policy is usually not fixed at the time when an initial policy blueprint is devised, and

allows the possibility of further significant policy development. Hill and Hupe (2002) have proposed a useful distrinction between ‘policy formation’ and ‘policy making’ which points to the way in which policy revision can continue over a period of time.

‘What is needed is a way of combining the analytical benefits offered by the “stage” model with a recognition of the interaction between the stages. We consider that this is best achieved by talking of policy formation (rather than making).This is then distinguishable in most cases, from an implementation process within which policy will continue to be shaped. If the term “policy making” stands for the policy process as a whole, then both implementation and policy formation refer to respectively “late” and “early” sub-processes to that process’ Hill and Hupe (2002)

2.1.1 Theoretical perspectives on implementation

2.1.1.1 Policy implementation

Policy implementation is a process of interaction between the setting of goals and actions geared to achieving them. (Williams, 1971 ; Pressman and Wildavsky, 1973 ; Van Meter and Van Horn’s, 1976 ; Mazmanian and Sabatier, 1989 ; Bardach, 1977).

An influential piece of research into implementation was carried out by Pressman and Wildavsky (1973). They investigated the relative failure of the Economic Development Agency (EDA) in the city of Oakland in California, USA to achieve its key objective of providing jobs for ethnic minority groups. The EDA sought to achieve this by financial aid schemes for public works and local businesses. The results were very disappointing. A great deal of money was spent, few jobs were created yet there was no apparent participant conflict or resistance to contend with.

Pressman and Wildavsky found that the main obstacle to success was poor coordination between all the various agencies involved in carrying out the policy. Therefore, the chain of command has to be capable of assembling and controlling resources, and the system able to communicate effectively and control those individuals and organizations involved in the performance of tasks (Parsons, 1995) . Pressman and Wildavsky later modified their original analysis towards a less top-down model of the implementation process, but they initiated a flow of literature that focused on the complex nature of policy implementation.

2.1.1.2 Policy implementation model

Various scholars proposed their model in many ways:

Green and Kreuter proposed the factors influencing implementation that composed of Staff commitment and attitudes, Program Goals, Rate of change, Familiality, Complexity, Space, Community circumstances, Quality assurance, Training, and Supervision. (Green and Kreuter, 1999) Dye (2001) admitted that bureaucrats may affect policy in implementation, and suggesting that all decisions are monitored to ensure they are not altered significantly. On the other hand, some scholars describes implementation of policy as highly influenced by 'street level bureaucrats'—front-line staff who can change policies significantly (Lipsky, 1980 ; Hjern and Porter, 1981). Much of the literature focuses on the gap or deficit between policy objectives and actual implementation (Hill and Hupe, 2002).

1) The top-down model

This model assumes that the process of implementation follows from decisions made at the top tier of any organization. These decisions then have to be implemented by personnel lower down the hierarchy.

Van Meter and Van Horn's (1975) proposed a model that influence on the implementation: standards for assessing performance; the resources and incentives made available; the quality of inter-organizational relationships; the characteristics of the implementation agencies, the economic, social and political environment; and the response of implementers (figure 2.2). Bardach's (1977) stated that implementation is a political process which will often require higher level actors to anticipate the 'games' that must be played with lower-level implementers and themselves to work actively to remove obstacles encountered during the implementation phase (figure 6) Hood (1976) and Gunn (1978) adopted the thesis of Pressman and Wildavsky that stressed a quasi-military approach to ensuring that policies were implemented as intended, and that as a result, the targeted goals were attained. Gunn added to these items, and later, in his collaborative work with Hogwood (Hogwood and Gunn, 1984), a list of ten prerequisites for perfect implementation was compiled:

1. The circumstances external to the implementing agency do not impose crippling constraints;

2. That adequate time and sufficient resources are made available to the program;

3. That not only are there no constraints in terms of overall resources but also, at each stage in the implementation process, the required combination of resources is available;

4. That the policy to be implemented is based upon a valid theory of cause and affect;

5. That the relationship between cause and effect is direct and that there are few, if any, intervening links;

6. That condition of 'perfect implementation' requires that there is a single implementing agency that need not depend up on other agencies for success, or, if other agencies must be involved, that dependency relationships are minimal in number and importance;

7. That there is complete understanding of, and agreement upon, the objectives to be achieved, and that these conditions persist throughout the implementation to be performed

8. That in moving towards agreed objectives it is possible to specify , in complete detail and perfect sequence, the tasks to be performed by each participant;

9. That there is perfect communication among, and co-ordination of, the various element involved in the program;

10. That those in authority can demand and obtain perfect compliance.

These ten conditions for perfect implementation in the "top-down" model of the policy process may be summed up under three broad headings:

1. Change. Has the extent of change been made clear and accepted by all interested and powerful groups affected by the policy ?

2. Control. Can the policy – makers control the resources required in order to implement the policy and also control and, if necessary, direct all participating groups and agencies?

3. Compliance. Does the top level of decision-makers have complete confidence that those people who have the task of putting the policy into effective do so without resistance?

Sabatier and Mazamanian (1980) proposed that the crucial role of implementation analysis is to identify the factors which affect the achievement of statutory objectives throughout this entire process. These can be divided into three broad categories: (1) the tractability of the problem(s) (2) The ability of statute to structure Implementation and (3) Non-statutory variables affecting implementation It distinguishes the three categories of independent variables from the stages of implementation, which constitute the dependent variables. (Figure 7)

1. Tractability of the Problem(s) Addressed by a Statute.

1.1 Difficulties in measuring changes in the seriousness of the problem, in relating such changes back to modifications in the behavior of target groups, and in developing the technology to enable target groups to institute such changes. The absence of a valid causal theory and/or the requisite technology in turn poses a number of difficulties for the successful implementation of statutory objectives.

1.2 Diversity of behavior being regulated. The more diverse the behavior being regulated, the more difficult it becomes to frame clear regulations and thus the less likely that statutory objectives will be attained.

1.3 Percentage of population within a political jurisdiction whose behavior needs to be changed. In general, the smaller and more definable (isolatable) the target group whose behavior needs to be changed, the more likely the mobilization of political support in favor of the program and thus the more probable the achievement of statutory objectives.

1.4 Extent of behavioral change required of target groups. The amount of behavioral modification required to achieve statutory objectives is a function of the (absolute) number of people in the ultimate target groups and the amount of change required of them.

2. Ability of statute to structure Implementation

2.1 Validity of the causal theory underlying statute. Explicitly or implicitly, a statute implies an underlying causal theory: Given a stipulated objective and the assignment of certain rights and responsibilities to various implementing institutions, the target groups will behave in the prescribed fashion and the objective will be attained.

2.2 Precision and clear ranking of statutory objectives. Statutory objectives which are precise and clearly ranked in importance serve as an indispensable aid in program evaluation, as unambiguous directives to implementing officials, and as a resource available to supporters of those objectives.

2.3 Financial resources available to the implementing agency. Money is obviously necessary to hire the staff and to conduct the technical analyses involved in the development of regulations, the administration of permit programs, and the monitoring of compliance.

2.4 The extent of hierarchical integration within and among implementing institutions. Numerous studies of the implementation of regulatory and social service programs have demonstrated that one of the principal obstacles is the difficulty of obtaining coordinated action within any given agency and among the numerous semi-autonomous agencies involved in most implementation efforts.

2.5 Extent to which decision rules of implementing agencies are supportive of statutory objectives. In addition to providing clear and consistent objectives, few veto points, and adequate incentives for compliance, a statute can further bias the Implementation process by stipulating the formal decision rules of the implementing agencies

2.6 Assignment to implementing agencies/officials committed to statutory objectives. No matter how well a statute structures the formal decision process, the attainment of statutory objectives which seek to significantly modify target group behavior is unlikely unless officials in the implementing agencies are strongly committed to the achievement of those objectives.

2.7 Extent to which opportunities for participation by actors external to the implementing agencies are biased toward supporters of statutory objectives. Just as a statute can bias the implementation process through design characteristics of implementing agencies, it can also affect the participation of two groups of actors external to those institutions: a) the potential beneficiaries and target groups of the program and b) the legislative, executive, and judicial sovereigns of the agencies.

3. Non-Statutory Variables Affecting Implementation

3.1 Variation over time and among governmental jurisdictions in social, economic, and technological conditions affecting the attainability of statutory objectives.

3.2 The amount and continuity of media attention to the problem addressed by a statute. The mass media are important for the implementation process for at least two reasons. First, they are generally a crucial intervening variable between changes in socio-economic conditions and perceptions of those changes by the general public and political elites.

3.3 Variations over time and jurisdiction in public support for statutory objectives. The previous discussion has suggested that interest among the general public in a statute or the problem it addresses tends to be cyclical which, in turn, makes it difficult for any program to receive sustained political support

3.4 Changes in the resources and attitudes of constituency groups toward statutory objectives and the policy outputs of implementing institutions.

3.5 Continued support for statutory objectives among sovereigns of implementing institutions

3.6 Commitment and leadership skill of (supportive) implementing officials.

4. The several stages process (dependent variable):

4.1 The policy outputs (decisions) of the implementing agencies.

4.2 The compliance of target groups with those decisions.

4.3 The actual impacts of agency decisions.

4.4 The perceived impacts of those decisions.

5. The political system's evaluation of a statute in terms of major revisions (or attempted revisions) in its content. All of these stages are often lumped together under the rubric of "feedback loop."

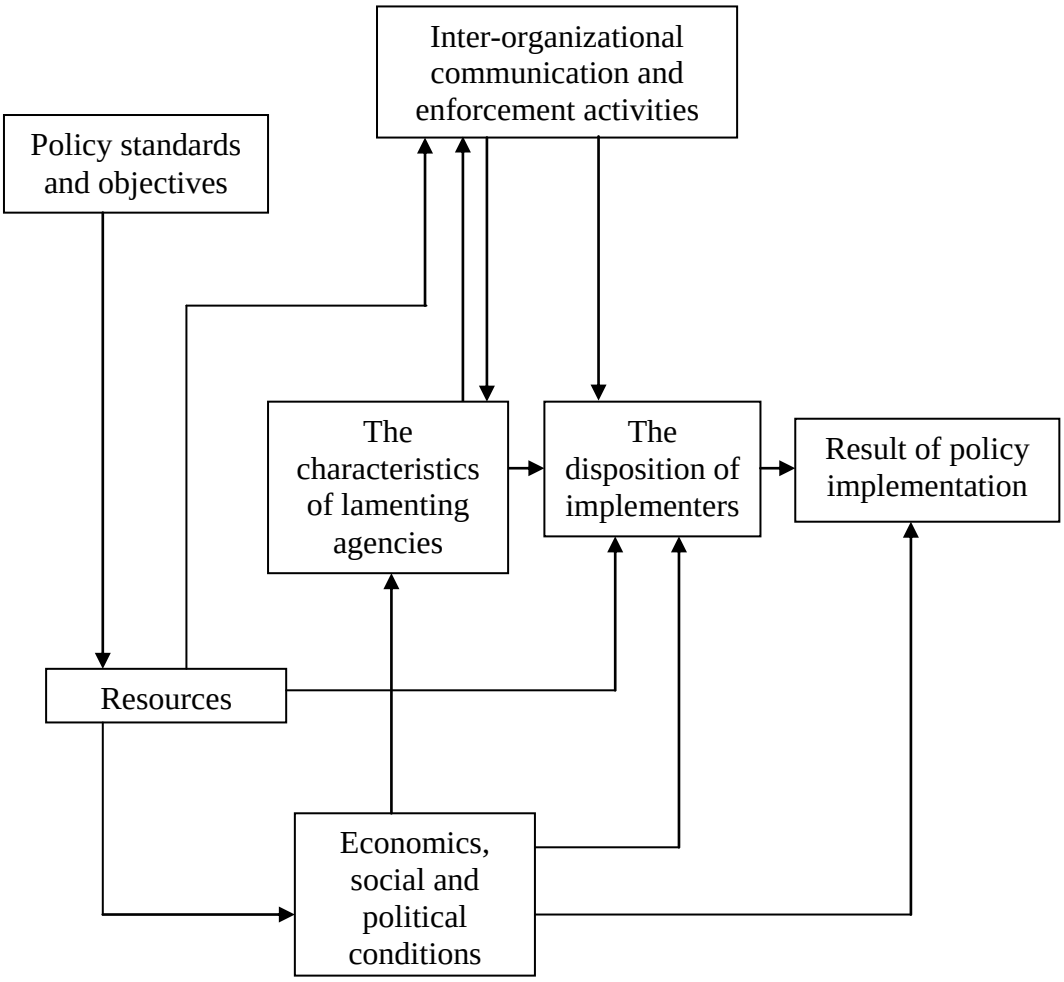


Figure 2.2 Model of policy implementation of Donald S.Van meter and Carl E.Van Horn

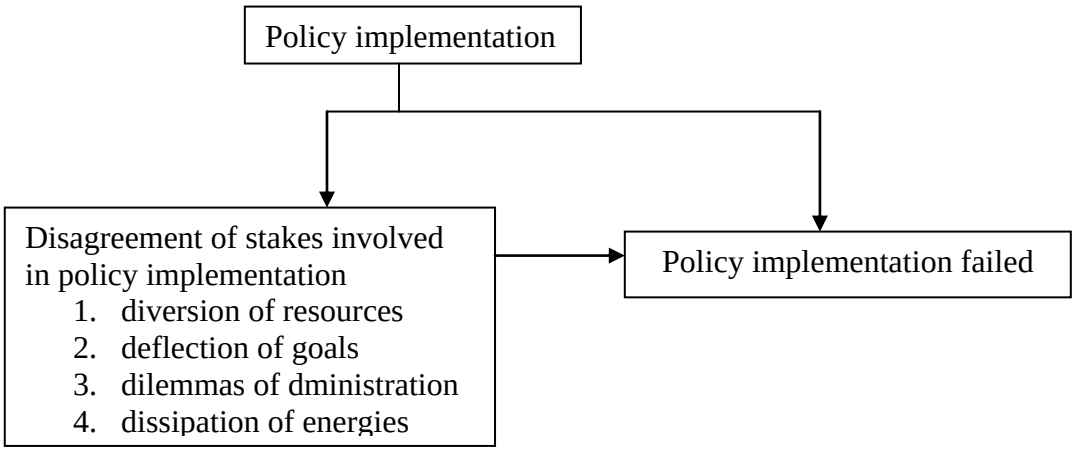


Figure 2.3 Model of policy implementation of Eugene Bardach

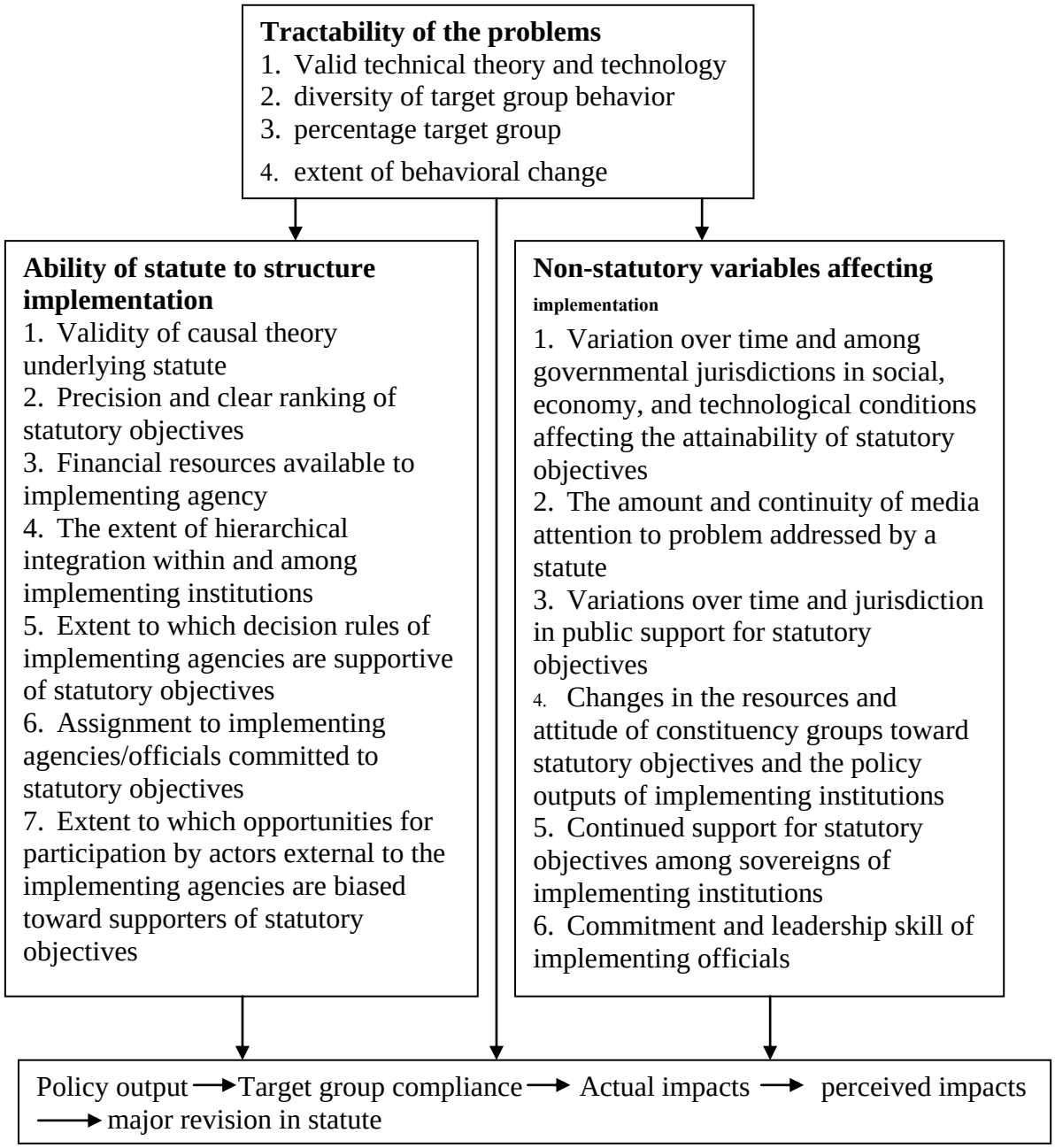


Figure 2.4 Model of policy implementation of Sabatier and Mazmanian

2) The bottom–up model

This approach has been described as a process of consultation and negotiation that takes place between those implementing policy, and as an approach that might at times be the only means by which resistances and suspicion on the part of individuals and groups with entrenched interests might be overcome and the policy successfully implemented. A useful contribution to recognizing the influence or

potential influence of lower-level "actors" in the implementation process is that of Lipsky (1980), who coined the expression "street level bureaucrats" to describe those people who lie at the interface between the organization and members of the public. People such as school teacher, nurses, social workers and social security officers all play a crucial role in the kind of service that people receive. According to supporters of the bottom-up model of policy implementation, these relatively low-level personnel may have more discretion to act in the way they think appropriate than they are given credit for. Consequently, they may mediate policy imperatives in the light of competing pressures such as limited resources.

Professional and administrative practices might not actually sabotage or even undermine policy but they may certainly slow down the process of implementation. Health and social care policies, for example, that rely heavily on inter-professional collaboration might not be very effective "on the ground" because, intentionally or unintentionally, a range of practitioners often find it difficult to work together, particularly in preplanned teams. Baggott (1998) has remarked Thai joint planning between health authority and local authorities in Britain failed to achieve a "seamless service" in relation to implementing community care policy and legislation because of the contrasting organizational cultures and structures. As a result, certain needs were defined in different ways. For example, the majority of health authorities regarded care of the elderly mentally ill as a duty of the psychiatric services, whereas local authorities preferred to view them as clients catered for by generic services for the elderly. Compounding the problem of implementation at "street level" are the professional rivalries between health services and local authority staff, the different planning timescales, differences in accountability and management structures, and the fact that, in many in trances, the geographical jurisdictions of the two types of authority were not co-terminus.

3) Combinations of two perspectives of implementation

One group of researchers has proposed different ways of combining the two formats within the same model (Sabatier, 1986;1988;1991 ; Sabatier and pelkey, 1987). Similarly, Elmor 's concept of forward and backward mapping (1982,1985) is an early attempt to combine top-down and bottom-up perspectives. Forward mapping consists of stating precise policy objectives, elaborating detailed

means-ends schemes, and specifying explicit outcome criteria by which to judge policy at each stage. Backward mapping consist of stating precisely the behavior to be changed at the lowest level, describing a set of operations that can insure the change, and repeating the procedure upward by step until the central level is reached. By using backward mapping, policy designers may find more appropriate tools than those initially chosen. This process insures consideration of microimplementaters' and target groups' interpretations of the policy problem and possible solutions. Goggin (1990) proposed his model of intergovernmental policy implementation that state implementation was in turn a function of inducement and constraints provided to (or imposed on) the states from elsewhere in the federal system above or below as well as a function of the states' own propensity to act and their capacity to effectuate their preferences. Moreover, state choices were not those of a single rational actor but may have been the result of bargaining among parties above them (the national level) as well as those below them (the local level) who were involved in state policies. Thus, this approach assumes that state implementation of federal program ultimately depends on both top-down and bottom-up types of variables (figure 2.5).

Kla Tongkao (1991) proposed a model that influence on the implementation: Policy's goal & objectives; Mission & authority; Social support; Evaluation & Regulation; Organization characteristics.(figure 2.6). Similarly, Voradej Chandarasorn (1997) proposed his model: Competency of organization; Efficiency of Evaluation & Regulation; Leadership and collaboration; Politic and Exogenous environmental administration; Policy implementation 3 dimension of evaluation (figure 2.7)

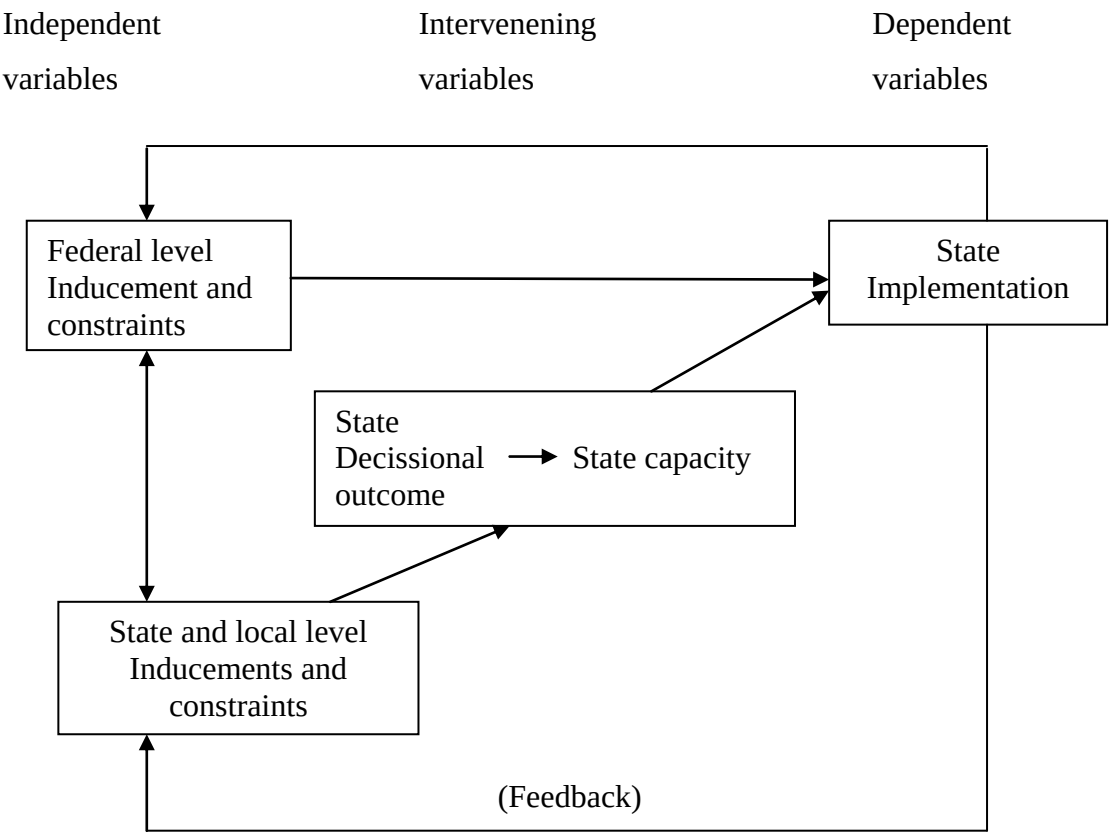


Figure 2.5 Model of intergovernmental policy implementation policy implementation of Malcom L.Goggin

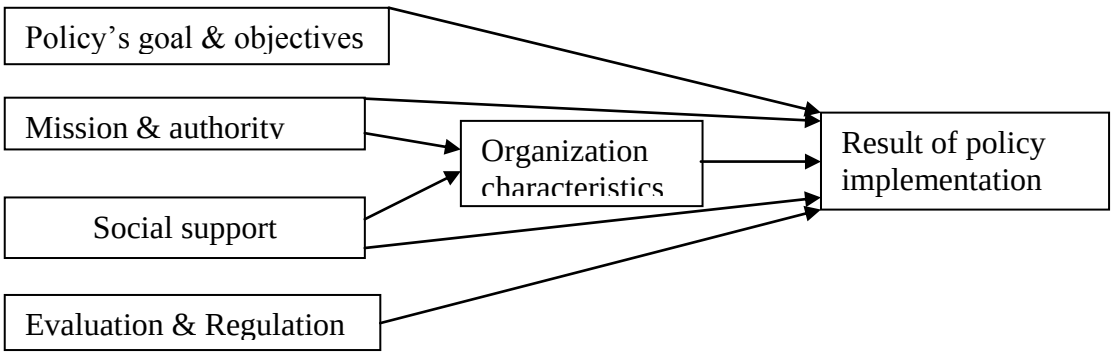


Figure 2.6 Model of Policy implementation of Kla Tongkao (1991**)**

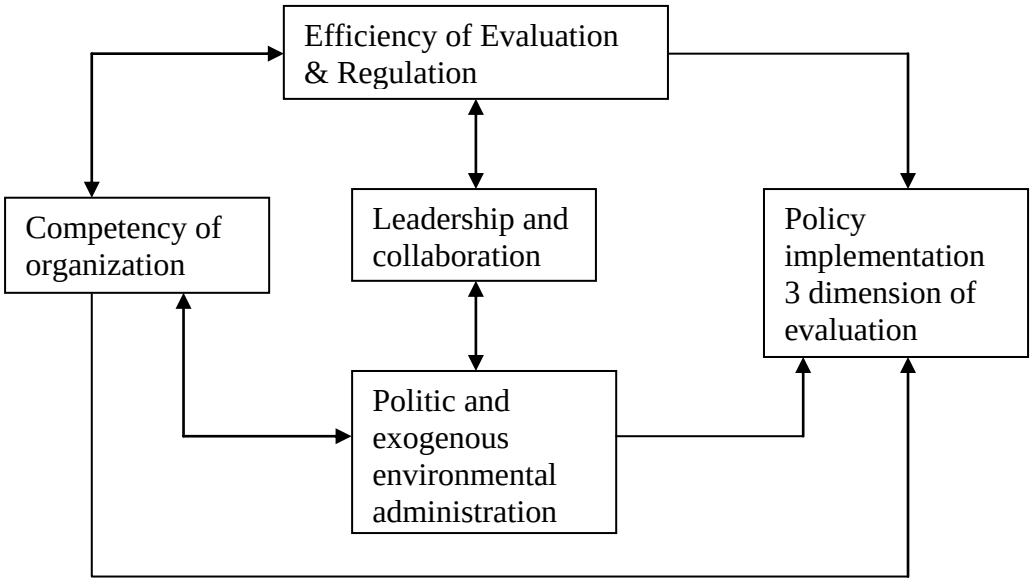


Figure 2.7 Model of Integrative Policy implementation of Voradej Chandarasorn (1997)

The approaches of policy implementation are concluded in the following table 2.2

Table 2.2 Chronology of policy implementation approaches

year	Top-down	Bottom-Up	Combinations of Top-down and Bottom-Up
1973	Pressman and Wildavsky		
1975	Van Meter and Van Horn		
1977	Bardach		
1980	Sabatier and Mazmanian	Michael Lipsky Richard F.Elmore	
1981		Barett and Fudge Hjern	
1984	Brain W.Hogwood and Lewis A.Gunn.		
1986			Sabatier O'tool
1990			Gogggin
1991			Kla Tongkoa
1997			Voradej Chandarasorn

Some scholars prefer to discuss when a model is appropriately applied rather than to try to build a combined model. The two perspectives should apply to different times in the implementation process depending on a set of parameters that describes the policy context. Top-down perspectives are more appropriate in the early planning states, but a bottom-up view is more appropriate in later evaluation stages and another group has searched for conditions under which one approach is more appropriate than the other (Dunsire, 1978 ; Saetren, 1983 ; Berman, 1980)

2.2 The Tambon Health Promoting Hospital (THPH)

. Primary care is provided by health personnel and general practitioners (GPs). In the Thai primary care system, except for to those services provided in health centers and community hospitals, there are no designated geographical areas. And in general there are no holistic care services at the family level. The universal coverage of health care policy of the present government aims to develop a holistic primary care system for all families across the country. In the near future, the entire holistic primary care system will be more effective and stronger.

Formerly, a health center was a sub-district (tambon) or village level health service unit - a first - line unit, covering a population of about 1,000 - 5,000, with health staffs including a health worker, a midwife and a technical nurse. Services provided at this level include health promotion, disease prevention, and curative care. Health center staffs run health programs according to the standard operational procedures established by the MoPH, under the technical supervision and support of the community hospital. Since 2002, under the universal coverage of health care scheme, Primary Care Unit (PCUs) have been established to provide basic or primary care to the people, with a linkage in a holistic manner, as well as referral system with higher-level of health care facilities.

At present, The Tambon Health Promoting Hospital (THPH) is upgraded from health centers, primary care units (PCUs) or community medical care unit for capacity building of primary care level to be the first line health service and solving health care service delivery problem, that is:

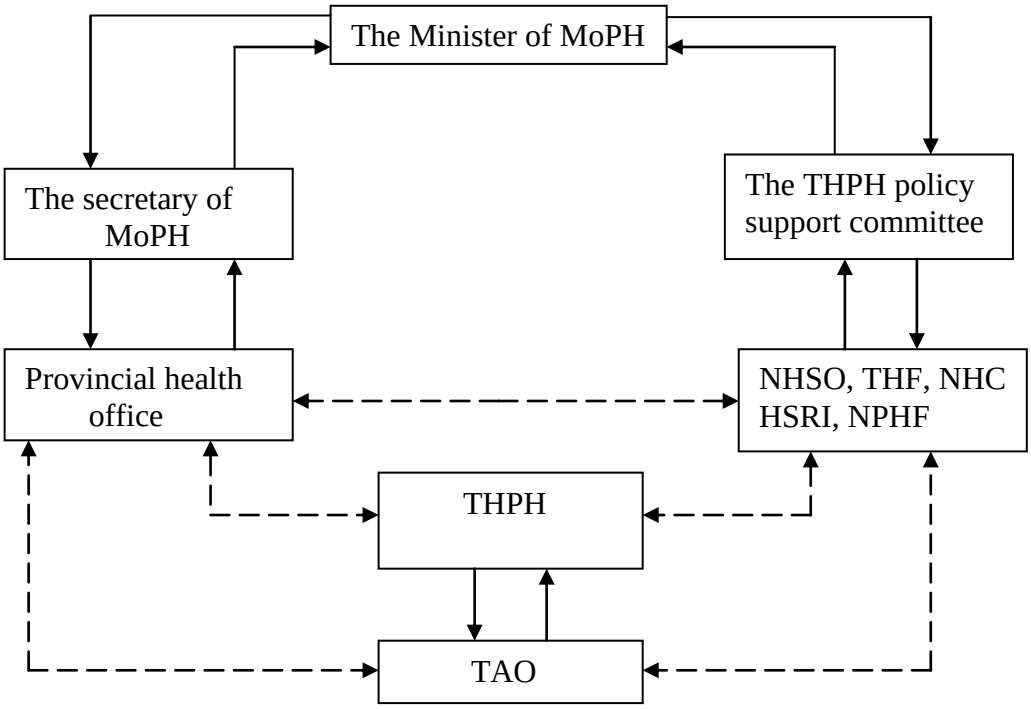
1. Equity for accessibility and quality of health care service
2. Limitation of resources .especially, manpower.

3. Participation of all sectors.

2.2.1 Chronology of The Tambon Health Promoting Hospital (THPH)

Table 2.3 Chronology of The Tambon Health Promoting Hospital (THPH)

Year	Situation
March 20, 2008	- Established Tambon Health Promotion Hospital (2009-2013). Mega project investment in health.
March 20, 2009	Policy implementation by Ministry of Public Health.
September 4, 2009	Prime Minister advocated Tambon Health Promotion Hospitals policy in Tambon Health Promotion Hospitals festival at Impact Exhibition and Convention Center.
October 1, 2009	- Upgraded 1,000 health centers, primary care units (PCUs) to be Tambon Health Promotion Hospitals
September 30, 2012	- Coverage 5,000 health centers, primary care units (PCUs) to be Tambon Health Promotion Hospitals.
October 1,2012 - September 30, 2019	- Continuity development of Tambon Health Promotion Hospital to be full option of services as well as evaluation according to its standard.



Source : MoPH

Figure 2.8 The connecting mechanisms of development and support system of THPH policy

2.2.2 The main Characteristics of the The Tambon Health Promoting Hospital(THPH)

2.2.2.1 Proactivity

2.2.2.2 Permanent health care services and continuity

2.2.2.3 Network and participation of all sectors.

2.2.2.4 Appropriate catchment area

2.2.2.5 Provider are polyvalent or skill mix and team work in four dimensions (treatment, health promotion, prevention, rehabilitation and health behavior modification of the people of all the risk group, the patient group and the well-being group.)

2.2.2.6 Management

2.2.2.7 Supporting system by community hospital, such as,

1) IT system and health information system (HIS)

2) Real time consulting system

3) Referral system

4) Emergency medical services (EMS)

5) The items and quality of medication similar to community hospital.

6) Community participation and empowerment

2.2.3 Classification of The Tambon Health Promoting Hospital (THPH)

2.2.3.1 Small-size: 5-6 people / 3,000 population

2.2.3.2 Medium–size: 6-8 people / 3,000 - 6,000 population

2.2.3.3 Large-size: 8-10 people / more than 6,000 population (1 person / 1,250 population)

2.2.4 Key performance indicators

2.2.4.1 Outcome indicator

1) Quantitative

Proportion of clients in primary care level increase (25% from previous) while OPD patients in large hospital decrease.

2) Qualitative

(1) Clients satisfaction of primary care service delivery.

(2) The referral patients are appropriately refer with practice guideline of all chronic diseases, emergency case and dental care.

2.2.4.2 Output indicators

1) The Tambon Health Promoting Hospital (THPH) has an infrastructure and medical instrument for preparedness in health care service within 4 years.

2) The Tambon Health Promoting Hospital (THPH) has a sufficient personnel and provide health care service.

2.2.5 Function of THPH

2.2.5.1 The main service, such as curative, health promotion, prevention, and rehabilitation of all people groups in community.

2.2.5.2 The complementary service, such as medical science, food and drug and Thai traditional medical service.

Table 2.4 Comparisons of the activities of the health center, PCU, and the Tambon Health Promoting Hospital (THPH)

Population /target group	**Activities of health center, PCU**	**Activities of THPH**
General population	- Basic medical care - UC core package - Screening risk factors in target group - Family folder - Basic dental care	- Basic medical care - UC core package - Screening risk factors in target group - Family folder - Basic dental care *- referral systems* *- Rehabilitation* *- behavioral modification in risk group* *- self care in first care and continuity*
Adolescent	-	- Sex knowledge and consultation - safe sex and responsibility - HIV and sexually transmitted diseases - Risk behavior surveillance in adolescent in community and school or university
Chronic disease group esp. DM, HT and stroke	- Follow up by DM and HT clinics - Home visit - Screening	- Follow up by DM and HT clinics - Home visit - Screening *Continuity of primary, secondary, and tertiary care.*
Children	-well baby clinic -vaccination -Breast feeding and complementary feeding -Nutrition	-well baby clinic -vaccination -Breast feeding and complementary feeding -Nutrition *- Care givers* *- growth monitoring* *-special care in special health problem children*
Female and pregnancy	- ANC&PNC - Iodine salt , - Family planning	-Reproductive health - CA cervix screening by Pap smear - Breast cancer screening by health personnel.

The THPH Primary care award (PCA) evaluation are summarized as figure 2.9

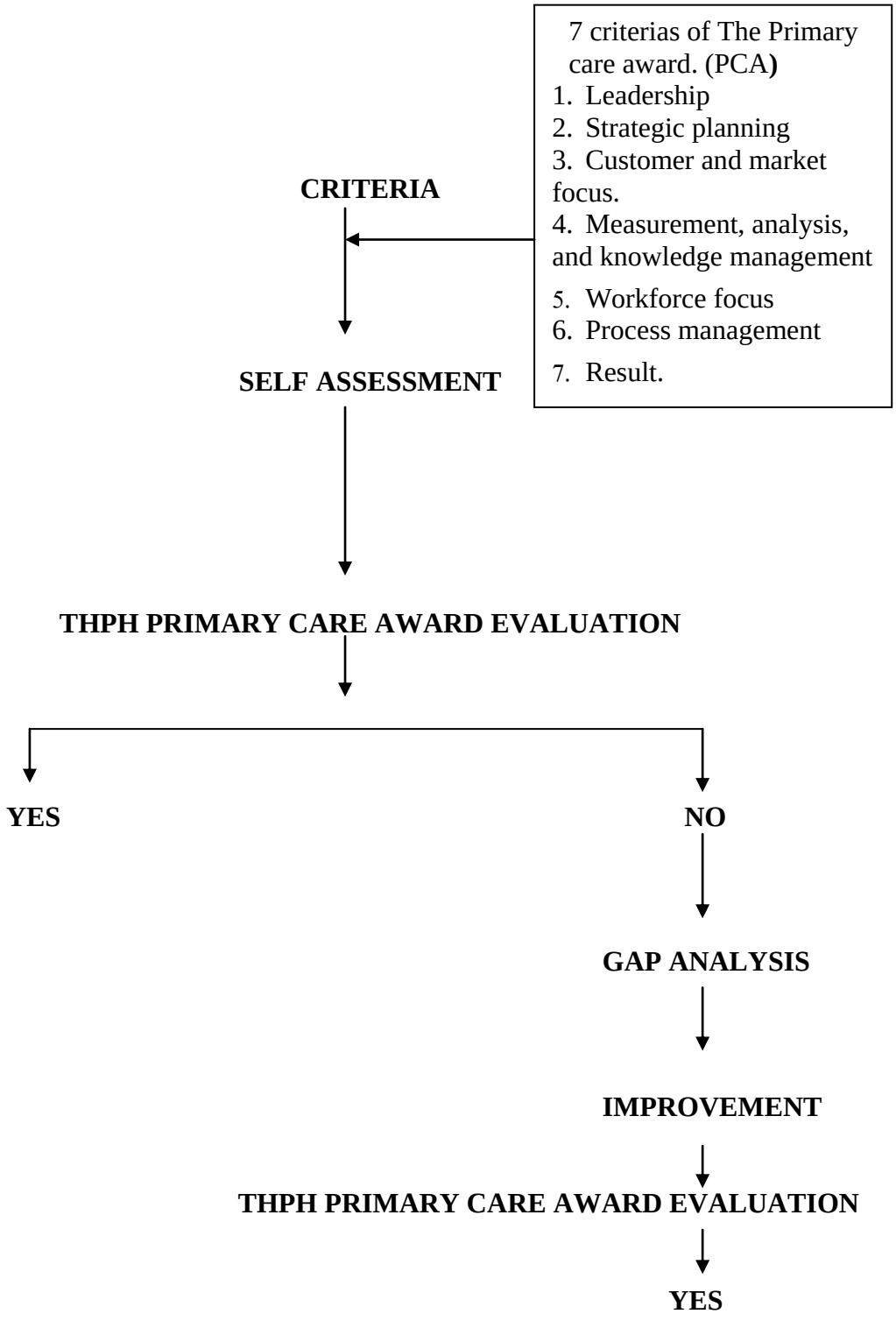


Figure 2.9 Process of THPH quality award evaluation

2.3 Self-efficacy

Self-efficacy refer to Beliefs about personal ability to perform behaviors that bring desired outcomes (Bandura, 1997). In other word**,** beliefs in one's capability to organize and execute the courses of action required to manage prospective situations. beliefs in one's capability to organize and execute the courses of action required to manage prospective situations. In essence, self-efficacy is the confidence that one has in one's ability to do the things that one tries to do.

Self-efficacy is the concept for which Social Cognitive Theory (SCT) is most widely known and which has been integrated into other models and theories. It consists of a person’s beliefs about her capacity to influence the quality of functioning and the events that affect her life.

The foundation of Bandura's conception of reciprocal determinism consists of:

1. Personal factors create in the form of cognition, affect, and biological events,
2. Behavior
3. Environmental influences create interactions that result in a triadic reciprocality.

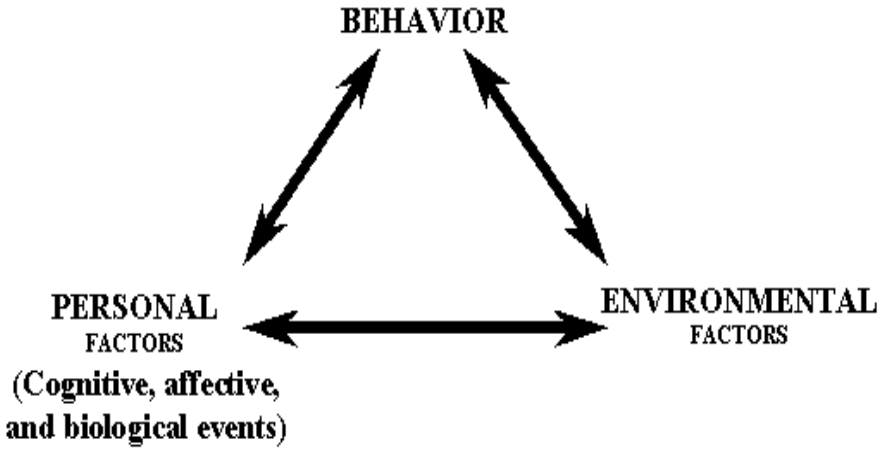


Figure 2.10 Triadic reciprocal causation (Bandura, 1997)

Since Bandura introduced the construct of self-efficacy to the psychological literature, numerous studies have shown that the performance of many behaviors is determined by both outcome expectations and self-efficacy beliefs, with the latter becoming more important for behaviors of progressive complexity or difficulty. (figure 2.11)

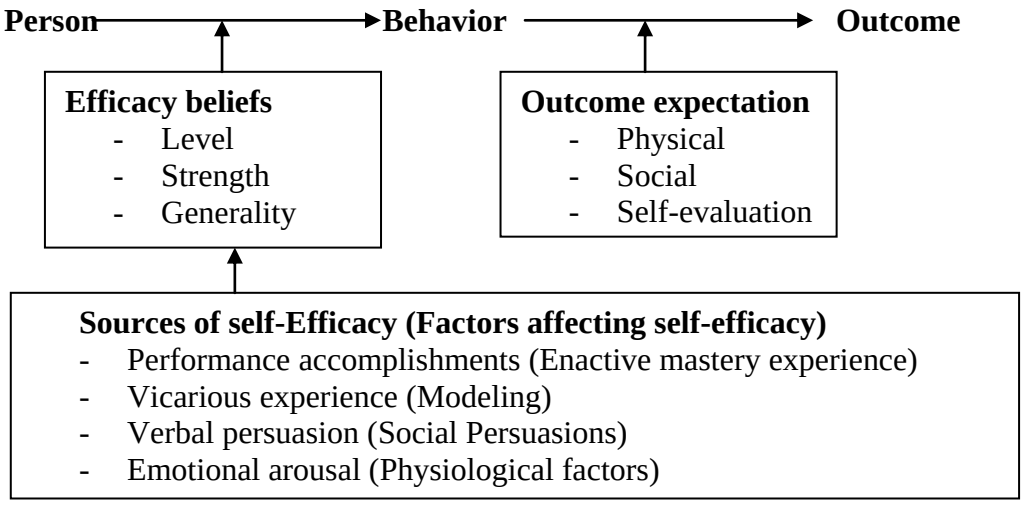


Figure 2.11 Self-efficacy theory (Bandura, 1997)

Self-efficacy theory composed of 2 important elements

1. Efficacy beliefs
2. Outcome expectations

2.3.1 Efficacy beliefs: persons with strong efficacy beliefs are more confident in their capacity to execute a behavior.

Bandura indicate that efficacy beliefs consist of:

2.3.1.1 Level

2.3.1.2 Strength

2.3.1.3 Generality

2.3.2 Outcome expectations: If the ones have more efficacy beliefs, they will change their behavior. As Bandura (1986) proposes,“ Outcome expectations can be dissociated from self-efficacy judgements when either no action can produce a selected effect or when extrinsic outcomes are loosely linked to level or quality of performance” (p.393)

Outcome expectations include:

2.3.2.1 Physical

2.3.2.2 Social

2.3.2.3 Self-evaluation

Self-efficacy has been shown to be a powerful influence on individuals' motivation, achievement, and self-regulation (Bandura, 1997 ; Multon, Brown and Lent, 1991 ; Pajares, 1997 ; Stajkoric and Luthans, 1998)

Self-efficacy is predicted to enhance human accomplishment and well-being in many ways (Bandura, 1986, 1997).

Self-efficacy can influence the choices people make and the courses of action they pursue. Individuals tend to select tasks and activities in which they feel competent and confident and avoid those in which they do not. Unless people believe that their action will produce the desired consequences, they have little incentive to engage in those actions. (Figure 2.12)

Outcome expectations

Efficacy beliefs	High	Low
High	Strong trend to perform	Trend to do not perform
Low	Trend to do not perform	Strong trend to do not perform

Source : Tassanee Prasopkittikul, 2551 : 2

Figure 2.12 Relation of Outcome expectations and Efficacy beliefs

Self-efficacy also helps determine how much effort people will extend on an activity, how long they will persevere when confronting obstacles, and how resilient they will be in the face of adverse situations. People with a strong sense of efficacy are apt to approach difficult tasks as challenges to be mastered rather than as threats to be avoided. They set challenging goals and maintain strong commitment to them. Heighten and sustain their efforts in the face of failure, and more quickly recover their sense of self-efficacy after setbacks. Conversely, people with low self-efficacy may believe that

things are more difficult than they really are – a belief that can foster anxiety, stress, depression, and a narrow vision of how best to solve problems.

Self-efficacy can influence one's ultimate accomplishments and lead to a self- fulfilling in which one accomplishes what one believes one can accomplish

2.3.3 Sources of self-Efficacy (Factors affecting self-efficacy) (Bandura, 1997)

2.3.3.1 Performance accomplishments (Enactive mastery experience) are one's personal mastery experiences, defined as past successes or failures. These experiences form expectations that are generalized to other situations which may be similar or substantially different from the original experience. For example, strong efficacy expectations are developed through repeated success of a behavior, and reduced efficacy expectations can result from failures. We can increase personal mastery for a behavior through participant modeling, performance exposure, self-instructed performances, and performance desensitization, the process through which aversive behavior is paired with a pleasant or relaxing experience.

2.3.3.2 Vicarious experience (Modeling), which is observing others perform threatening activities without adverse consequences, can also enhance personal self-efficacy by demonstrating that the activity is "do-able" with a little effort and persistence. Vicarious experience can be enhanced through live modeling (observing others perform an activity), or symbolic modeling.

2.3.3.3 Verbal persuasion (Social Persuasions). People are led to believe they can successfully accomplish a task or behavior through the use of suggestion, exhortation, or self-instruction. However, because verbal persuasion is not grounded in personal experience, it is a weaker inducer of efficacy and may be extinguished by histories of past failures.

2.3.3.4 Emotional arousal (Physiological Factors). We can enhance perceived self-efficacy by diminishing emotional arousals such as fear, stress, and physical agitation since they are associated with decreased performance, reduced success, and other avoidance behaviors. Emotional arousal can be mitigated with repeated symbolic exposure that allows people to practice dealing with stress, relaxation techniques, and symbolic desensitization. Perceived self-efficacy also affects how successfully goals are accomplished by influencing the level of effort and persistence a person will demonstrate in the face of obstacles. That is, the stronger the perceived self-efficacy, the more active our efforts. Higher self-efficacy is

also associated with more persistence, a trait that allows us to gain corrective experiences that reinforce our sense of self-efficacy.

2.4 Social support

Social support is a concept that is generally understood in an intuitive sense, as the help from other people in a difficult life situation. The term social support has been defined and measured in numerous ways.

Cobb (1976) defined social support as 'the individual belief that one is cared for and loved, esteemed and valued, and belongs to a network of communication and mutual obligations'.

Social support is defined as 'the perceived availability of people whom the individual trusts and who make one feel cared for and valued as a person' (Mindful, 2008)

Social support refers to Aid and assistance exchanged through social relationships and interpersonal transactions (Berkman, Glass, Brissette and Seeman, 2000).

Social support is the functional content of relationships that can be categorized into four broad types of supportive behaviors or acts (House, 1981):

2.4.1 Types of social support:

2.4.1.1 Emotional support generally comes from family and close friends and is the most commonly recognized form of social support. It includes empathy, concern, caring, love, and trust.

2.4.1.2 Instrumental support is the most concrete direct form of social support, encompassing help in the form of money, time, in-kind assistance, and other explicit interventions on the person's behalf. It is provided by close friends, colleagues and neighbors.

2.4.1.3 Informational support is the provision of advice, suggestions, information or directives that assist the person to respond to personal or situational demands.

2.4.1.4 Appraisal support involves transmission of information in the form of affirmation, feedback and social comparison. This information is often evaluative and can come from family, friends, co-workers, or community sources.

In essence, social support is aid and assistance that one is received from people whom one trusts and who make one has the confidence to overcome a difficult life situation

2.4.2 Sources of social support There are 5 groups as follow:

2.4.2.1 Natural support system : family that is the primary support

2.4.2.2 Peer support system: this group had a same experience that had severe affect to their life and they could be successful to adaptation. As a result, They can be a counselor in the same situation to the others.

2.4.2.3 Organized Religious support system

2.4.2.4 Organized Religious support system of care giving or helping

2.4.2.5 Organized support groups not directed by health professional

This study using number 1,2,3,4 to apply for intervention

Cohen and his colleagues (S. Cohen and Syme, 1985 ; S. Cohen and Wills, 1985) proposed a distinction between structural and functional support measures. Structural refers to measures describing the existence of and interconnections between social ties (e.g., marital status, number of relationships, or number of relations who know one another). Functional measures assess whether interpersonal relationships serve particular functions (e.g., provide affection, feelings of belonging, or material aid). House and Kahn's (1985) social network and social relationship category would be classified functional.

The most common measure is a structural index of social ties that is often termed social integration (SI). A prototypic SI index includes marital status, close family and friends, participation in group activities, and church/ religious affiliations. Functional measures used in the physical disease literature include network satisfaction and perceived availability of material aid or psychological support.

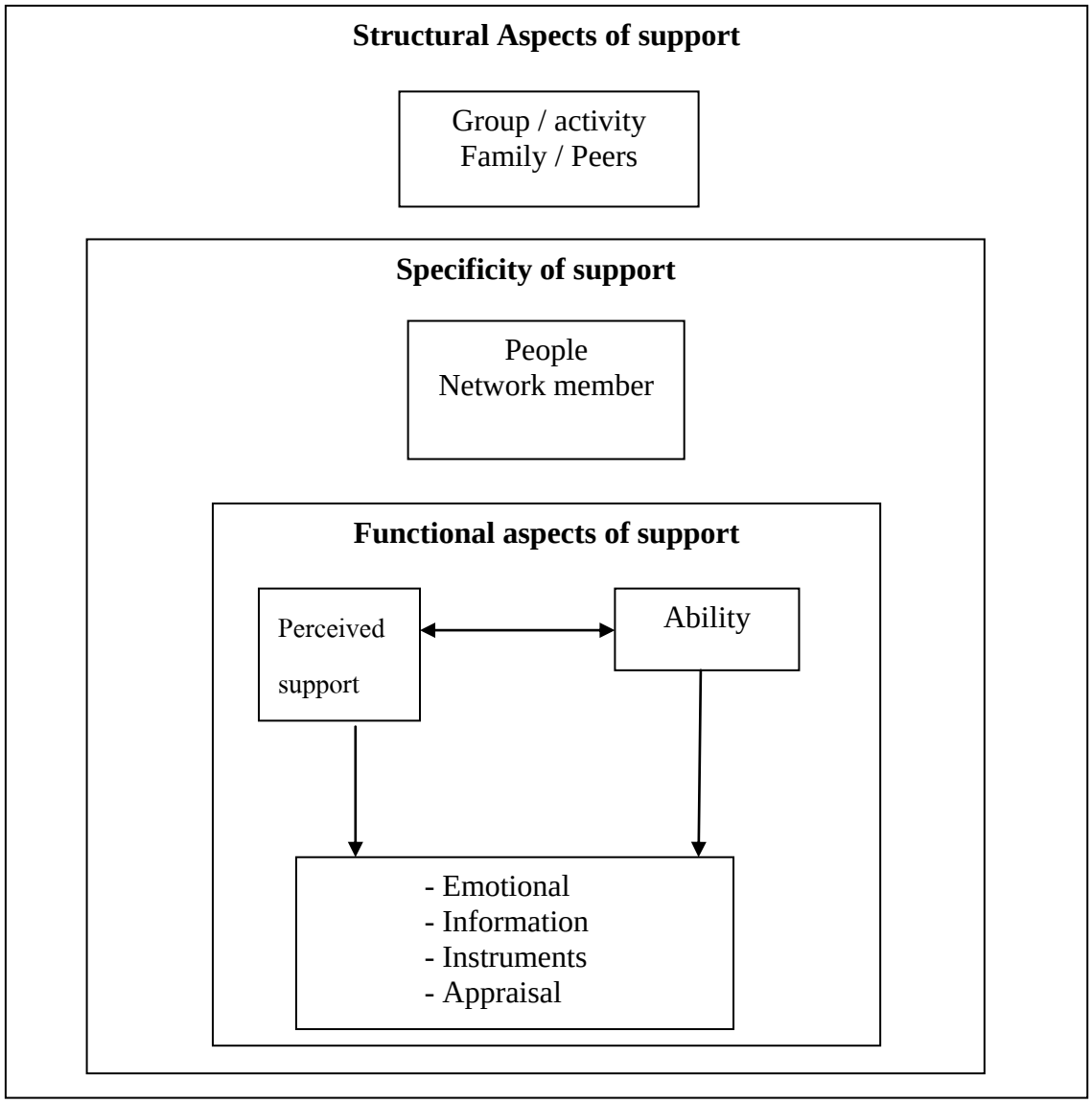


Figure 2.13 Coherence of between structural and functional support measures: Uchino, 2004

2.4.3 Effect of social support to health

Social-cognitive views of social support are concerned primarily with the perception of support. A major premise is that once a person develops stable beliefs about the supportiveness of others, day-to-day thoughts about social support are shaded to fit these preexisting beliefs. In comparison to those with low levels of perceived support, those with high levels should interpret the same behaviors as more supportive, have better memory for supportive behaviors, display greater attention to supportive behaviors, and be able to think

about support with greater ease and speed (Baldwin, 1992; Lakey and Cassady, 1990; Lakey and Drew, 1997; Mankowski and Wyer, 1997)

2.4.4 Theories of social support's links to health Several theories have been proposed to explain social support's link to health. The dominant theory is stress and coping social support theory (Cohen and Wills, 1985), which is designed to explain stress buffering effects. Life-span theory (Uchino, 2009) is designed to explain how the trait-like aspect of social support is linked to physical health. Relational regulation theory (Lakey and Orehek, 2011) focuses on the relational aspect of perceived support and is designed to explain the main effect between perceived support and mental health.

Stress and coping social support theory (Barrera, 1986; Cohen and Wills, 1985; Cutrona and Russell, 1990; Thoits, 1986) dominates social support research. According to this theory, social support protects people from the bad health effects of stressful events (i.e., stress buffering) by influencing how people think about and cope with the events. According to stress and coping theory (Lazaraus and Folkman, 1984), events are stressful insofar as people have negative thoughts about the event (appraisal)and cope ineffectively. Coping consists of deliberate, conscious actions such as problem solving or relaxation. As applied to social support, enacted support promotes adaptive appraisal and coping. Perceived support reflects a history of receiving effective enacted support. Evidence for stress and coping social support theory is found in studies that observe stress buffering effects for social support (Cohen and Wills, 1985). One problem with this theory is that, as described previously, enacted support is typically not linked to better health outcomes (Barrera, 1986; Uchino, 2009).

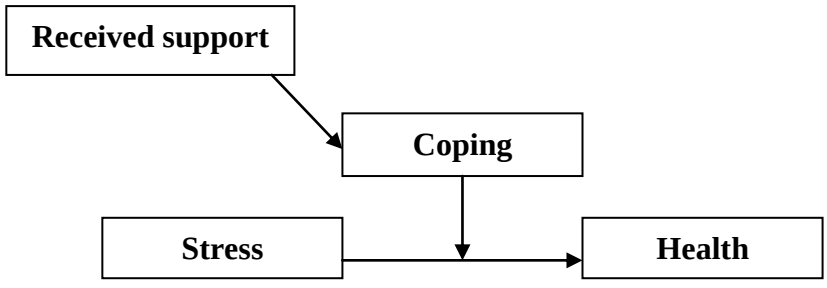
Life-span theory (Uchino, 2009) focuses on how trait-like aspects of perceived support and social integration can explain links to physical health. According to this theory, social support develops throughout the life span, but especially in childhood attachment with parents. Social support develops in tandem with adaptive personality characteristics such as low hostility, low neuroticism, high optimism, as well as social and coping skills. Together, support and other aspects of personality influence health largely by promoting health practices (e.g., exercise and weight management) and by preventing health-related stressors (e.g., job loss, divorce). Evidence for life-span theory includes that a portion of perceived support is trait-like (Lakey, 2010), and that perceived support is linked to adaptive personality characteristics and attachment experiences (Uchino, 2009).

Relational regulation theory (RRT; Lakey and Orehek, 2011) is designed to explain main effects between perceived support and mental health that result from relational influences. As described previously, perceived support is primarily relational (Lakey, 2010). Other research has shown a weaker than expected correlation between perceived support and enacted support (Barrera, 1986). Lakey and Orehek (2011) interpreted this weaker link to mean that perceived support's correlation with mental health is based on processes other than stress and coping. Thus, RRT hypothesizes that people regulate their emotions through ordinary conversations and shared activities. Yet, this regulation is relational in that the providers, conversation topics and activities that help regulate emotion are primarily a matter of personal taste.

2.4.5 Two main types of social support effects

There are two key ways by which social support is linked to health: stress buffering and main effects (Cohen and Wills, 1985).

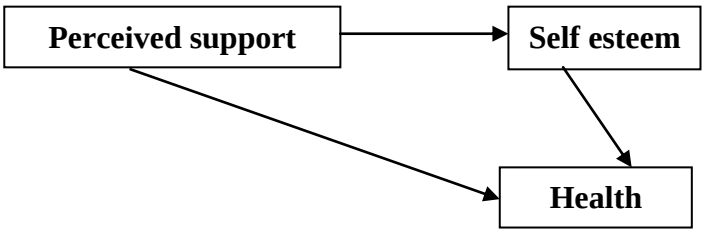
2.4.5.1 Stress buffering, social support protects people from the bad effects of stressful life events (e.g., death of a spouse; job loss). Evidence for stress buffering is found when the correlation between bad events and poor mental or physical health is weaker for people with high social support than for people with low social support. The weak correlation between stress and health for people with high social support is often interpreted to mean that social support has protected people from stress. The supportive actions approach predicts that received support enhances coping, which buffers the relation between stress and health outcomes. (Figure 2.14)



Source : Cohen & Wills, 1985

Figure 2.14 Stress buffering effect of social support

Main effects; people with high social support are in better health than people with low social support regardless of stress. Stress buffering is more likely to be observed for perceived support than for social integration (Cohen and Wills, 1985) or enacted support (Barrera, 1986). Perceived support also shows consistent main effects for mental health outcomes (Lakey and Cronin, 2008) and both perceived support and social integration show main effects for physical health outcomes (Uchino, 2009). Enacted support rarely shows main effects (Barrera, 1986; Uchino, 2009.) The social-cognitive perspective predicts that perceived support promotes self-esteem, which leads to health outcomes. Perceived support also leads directly to health outcomes. (Figure 2.15)



Source : Cohen and Wills, 1985

Figure 2.15 Main effect of social support to health

2.5 Chronic disease

2.5.1 Definition of chronic disease

There are various definition as follows:

1) Chronic diseases refer to diseases of long duration and generally slow progression (WHO, 2008)

2) Chronic diseases refer to conditions that are not cured once acquired are considered chronic. Additionally, other conditions must have been present for 3 months or longer to be considered chronic. (the United States Centers for Disease Prevention and Control, 2008).

Therefore, in this thesis; chronic diseases are conditions or diseases that are not cured once acquired and long duration must have been present 3 months or longer. The most common chronic diseases are heart disease, stroke, cancer, respiratory disease, diabetes, mental health problems, and cancer. Laboratory, clinical, and population-

based studies suggest that a few risk factors are responsible for most chronic diseases: unhealthy diet and high energy intake, lack of physical activity, and tobacco use. Alcohol intake, environmental pollutants, age, and hereditary factors also play a role.

2.5.2 Chronic disease management

The Kaiser Permanente care triangle has commonly been used to conceptualize chronic care at three main levels (underpinning by population-wide disease prevention and health promotion):

1) supporting self-care for people with a chronic disease who are at low risk of complications and hospitalization;

2) disease management for people who need regular routine follow-up and are at high risk; and.

3) case management for people with complex needs who are high-intensity users of unplanned secondary care.

For this brief, disease management is defined as the coordination of care at all levels.

2.5.3 Chronic Care Model

One of the most widely applied is the generic chronic care model, originally developed in the United States. The model suggests that six interdependent components are essential for chronic disease management: health care organization, delivery system design, community resources and policies, self-management support, decision support, and clinical information systems (Bodenheimer et al., 2002). Denmark, England, France, Germany, Ireland, Italy, Scotland, Sweden, and Wales have adopted policies based to some extent on this model focused on service delivery. The approaches in these countries are very different, but they share an emphasis on disease management at the level of service delivery.

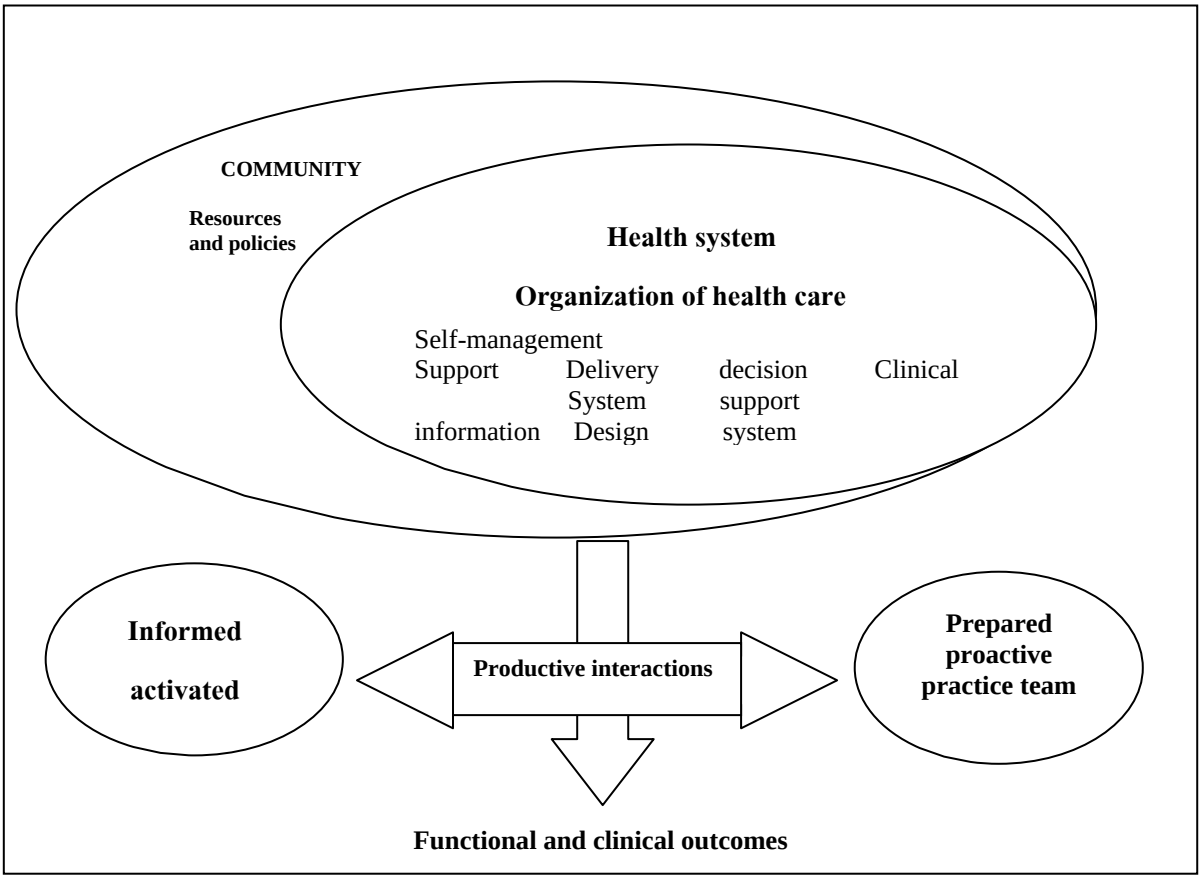


Figure 2.16 The chronic care model

In the Netherlands, the government has been implementing components of the chronic care model for at least 10 years (before the model was formally conceptualized).Tran mural care programs aim to bridge the gap between hospital and community care (an intermediate care approach), but some research suggests that this approach is not broad enough to have a long-term impact (Temmink et al., 2001).

One meta-analysis (Tsai et al., 2005) found that no single element of the chronic care model was essential for improving outcomes but that changing the design of the delivery system significantly improved processes and outcomes, as did self-management support. On the other hand, the RAND Corporation set up a formal evaluation of the chronic care model with more than 40 organizations in the United States. The evaluators found that this policy option can lead to better processes and outcomes of care, including clinical outcomes, satisfaction and costs (Pearson et al, 2005). Four components of the model were most likely to be associated with sustained

change: organizing practice teams, collaborative decision-making with people with long-term conditions, encouraging provider participation in improvement efforts, and wider patient education methods. All focused on communication, involvement, and engagement – core aspects of policy options that take a population health or system-wide approach. Such findings are important because they attempt to analyze exactly which components of the policy framework may have most benefit and whether the entire model or just some components are necessary. Much of the research evidence about these frameworks is observational and cannot be used to draw causal inferences. There are trials and reviews of specific policy components, such as patient education or self-management, but few high-quality studies have assessed the effects of the overall framework of focusing policy at the level of service delivery. The few studies that do investigate this area tend to have relatively small numbers of participants, are industry-sponsored or do not investigate health care resource use and costs (Walsh et al., 2002, Feifer et al., 2001).

WHO's Innovative Care for Chronic Conditions Framework, which focuses on community and policy aspects of improving chronic care rather than the primary care focus of the chronic care model (Fig. 2.16), is also a system-wide approach. It suggests that it is important to target disease management at the micro level (individual and family), meso level (health care organization and community) and macro level (policy).

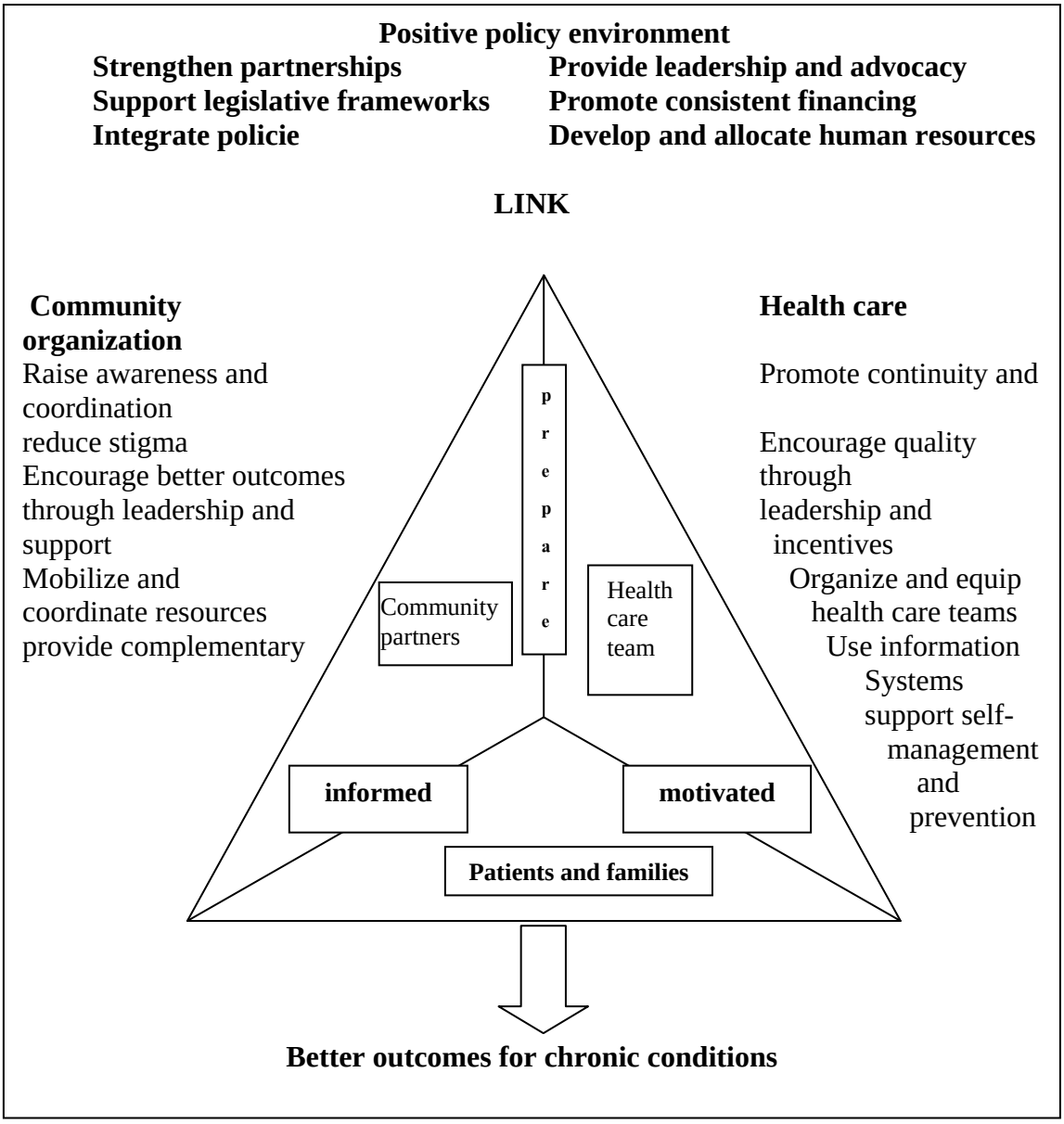


Figure 2.17 The Innovative Care for Chronic Conditions Framework

Another system-wide policy approach is the ecological or public health model for chronic conditions. The principle is that influencing the burden of chronic conditions requires intervention in population-wide policies, community activities and health services. This perspective includes the continuum of prevention and care.

It emphasizes the determinants of disease as well as social, cultural and economic factors that might affect the quality and quantity of care. Policies based on an ecological perspective emphasize the interaction between and interdependence of factors within

and across all levels of health policy, including people's interactions with their physical and socio cultural environments. It takes account of inequality in health and its causes (Schwartz and Brownell, 2007)

Evaluations of individual initiatives using this model have found benefits for service users and service provision (Gemson et al., 1990; Gritz et al., 1992; Stewart et al., 1997) Evaluations also suggest that leadership, epidemiology and surveillance, partnerships, government plans, targeted interventions, evaluation and good program management are all critical to implementing chronic disease management across care programs (CDC, 2003)

2.6 Diabetes Mellitus

Diabetes mellitus is a major problem worldwide, affecting approximately 180 million people (WHO, 2006). Diabetes has a major impact on the global burden of disease through its detrimental impact, if not controlled, on the heart, blood vessels, eyes, kidneys and nerves, so accelerating death and disability from other conditions.

The prevalence of diabetes worldwide in 2000 was estimated to be 2.8% and is expected to increase to 4.4% by 2030 (Wild et al., 2004). In the United States, the age-adjusted prevalence is already 6.3% (Engelgau et al., 2004), with one in three persons born in 2000 anticipated to develop diabetes at some point in their life (Narayan et al., 2003). This increase is mainly in type 2 diabetes although type 1 diabetes is also increasing swiftly, at approximately 3% per year. There is a strong association between obesity, increasingly affecting children, and incidence of type 2 diabetes (Haines et al., 2007). Large relative increases in diabetes prevalence are expected to be seen in countries undergoing economic and nutrition transition. (International Diabetes Federation, 2003).

2.6.1 Historical background

Definition:

Diabetes mellitus (DM) is a clinically and genetically heterogeneous group of disorders characterized by abnormally high levels of glucose in the blood. The hyperglycemia is due to deficiency of insulin secretion or to resistance of the body's cells to the action of insulin, or to a combination of these. Often there are also disturbances of carbohydrate, fat, and protein metabolism.

It has been centuries since this syndrome was first recognized. Credit for the initial observation that diabetes is not a single disorder rests with two Indian physicians-Chakrata and Susruta (600 B.C.)-who differentiated two forms of the disease, althought most of the descriptions in the classic literature probably relate to what we know today as type 1 (insulin – dependent) DM. During the 18th and 19th centuries, a less clinically symptomatic variety of the disorder, identified by heavy glucosuria, often detected in later life and commonly associated with overweight rather than wasting, was noted, which today we recognize as type 2 DM. In the 20th century, when screening programs for DM commenced, it became apparent that there were many people who could be classified as having DM but who were in general "asymptomatic." It has subsequently become apparent that the term diabetes mellitus covers a wide spectrum of disease, from those with acute and sometimes explosive onset to asymptomatic people whose disease is discovered by screening.

In the mid – 1930s, Himsworth (Himsworth, 1936) proposed that there were at least two clinical types of DM, insulin sensitive and insulin insensitive, the former being due to insulin deficiency. Confirmation of his clinical observations came with Bornstein and Lawrence's (Bornstein and Lawrence, 1956) development of a bioassay for insulin, and when radioimmunoassay for insulin became available a decade later (Berson and Yalow, 1979), Bornstein and Lawrence,s observations were confirmed. The widespread acceptance of the terms juvenile – onset and maturity – onset DM at this time affirmed the concept that there were at least two major forms of the disease.

During the last decades of the 20th century, research has led to the recognition that DM is a syndrome and comprises a heterogeneous collection of disorders, and that the different types of DM have different etiologies, although their pathologic effects after onset of disease may be similar.

2.6.2 Modern classification systems for diabetes mellitus

In 1979, a classification for DM and other categories of glucose intolerance, based on scientific research on this heterogeneous syndrome, was developed by an international workgroup sponsored by the National Diabetes Data Group (ADDG) of the National Institutes of Health. This group recognized DM as being a syndrome, a collection of disorders that have hyperglycemia and glucose intolerance as their

hallmark characteristics, due either to insulin deficiency or to impaired effectiveness of insulin's action, or to a combination of these. The World Health Organization (WHO) Expert Committee on Diabetes in 1980 endorsed the substantive recommendations of the NDDG (WHO, 1980). These groups distinguished two major forms of DM in Western countries, which they termed insulin – dependent DM (type 1 DM) and non – insulin – dependent DM (type 2 DM). The older terms "juvenile–onset," "maturity–onset," and "adult–onset " DM were recommended to be abolished.

2.6.3 The American Diabetes Association classification system

In 1996 and 1997, an expert committee of the American Diabetes Association considered the research findings of the last 20 years and proposed some changes to the NDDG/WHO classification scheme. The main features of the changes in the classification are:

2.6.3.1 Elimination of the terms insulin – dependent DM and non – insulin dependent DM and their acronyms, IDDM and NIDDM. However, the terms type 1 and type 2 DM were proposed to be retained.

2.6.3.2 Inclusion under type 1 DM of forms of DM involving pancreatic β – cell destruction, including those cases due to an autoimmune cause and those cases in which an etiology is not known.

2.6.3.3 More precise definition under type 2 DM of the form of DM that is the most prevalent in the United States and is due to insulin resistance with insulin secretary defects.

The exact causes of type 1 and type 2 DM, the subject of intensive research for decades, remain unknown, although both can be accompanied by ketoacidosis, blindness, kidney failure, premature cardiovascular disease, stroke, amputations, and other diabetic complications. DM associated with other conditions may be strictly secondary to the pathophysiologic consequences of these conditions. GDM may arise from the physiologic stresses of pregnancy or it may be a degree of abnormal glucose tolerance that precedes pregnancy and is discovered during the routine metabolic testing that occurs during pregnancy.

2.6.4 Type 1 Diabetes Mellitus

This type of DM comprises approximately 5% to 10% of cases in the DM syndrome. It is the most common form of DM among children and adolescents and was

formerly termed juvenile – onset DM. In these people, the disease is usually characterized by abrupt onset of severe symptoms, dependence on exogenous insulin to sustain life, and proneness to ketosis even in the basal state, all of which are caused by absolute insulin deficiency (insulinopenia).

Type 1 DM results from β – cell destruction that leads to virtually total loss of insulin secretion and absolute insulin deficiency.Two subclasses are discriminated: an autoimmune class and an idiopathic class. The autoimmune form is a chronic disease with a subclinical prodromal period characterized by cellular – mediated autoimmune destruction of the insulin – producing β – cell in the pancreatic islets. The etiologic agents that initiate the autoimmune process and β – cell destruction are not established but are the subject of intensive research. Environment factors may trigger initial β – cell damage and subsequently accelerate the destructive process. The most likely environmental candidates are viral infections. Genetic and environmental etiologies probably are heterogeneous, as evidenced by the wide variability in the occurrence of type 1 DM. The incidence is highest in Scandinavia, with more than 30 cases/year/100,000 people, of medium incidence in Europe and the United States (approximately 10 to 15 cases/year/10,000) and populations living in the tropics (Karvonen et al., 1993). The disease appears to be virtually absent in some populations (e.g., North American Indians and Pacific Islanders).

Type 1 DM also includes cases in which causes of the β – cell destruction are not understood but are thought to not be immune mediated. A minority of patients with type 1 DM are in this category, which is strongly inherited but not associated with histocompatibility genes. Patients experience episodic ketoacidosis and varying degrees of insulin deficiency; most are of African or Asian origin.

2.6.5 Type 2 Diabetes Mellitus

This type of DM comprises approximately 90% of the DM syndrome and, in certain groups such as North American Indians and populations in the South Pacific, it is virtually the only form of DM (King et al., 1995). It is characterized by insulin resistance in muscle, liver, and adipose tissue that probably begins at a preclinical stage (possibly at the stage of impaired glucose tolerance). Type 2 DM may be unrecognized for years because of lack of symptoms. Eventually, defect in insulin secretion leading to decompensate hyperglycemia precipitate clinical onset of the disease.

In contrast to type 1 DM, patients with type 2 DM do not depend on exogenous insulin for prevention of ketonuria and are not prone to ketosis. However, they may require insulin for correction of fasting hyperglycemia if this cannot be achieved with the use of diet or oral agents, and ketosis may develop under special circumstances such as severe stress precipitated by infections or trauma. In the basal state, there may be normal levels of insulin, mild insulinopenia, or above – normal levels of insulin associated with insulin resistance. In response to a glucose or meal challenge, a range of insulin levels from low to supranormal has been found in the group of diabetic patients in this subclass.

Although diagnosis in most patients with type 2 DM is made in adult years, the disease also occurs in young people who do not require insulin and are not ketotic and hence could not be considered to have type 1 DM (Scott et al., 1997; Neufeld et al., 1998). In addition, the average age at diagnosis of type 2 DM is much earlier in very high prevalence groups such as North American Indians and Pacific Islanders, and somewhat earlier in medium prevalence group such as African Americans and Hispanic Americans, compared with the U.S. white population (Harris et al., 1995).

Although the etiology of type 2 DM is unclear, the disease has a strong genetic basis as evidenced by the frequent familial pattern of occurrence, its high prevalence in certain ethnic groups, and genetic admixture studies. Virtually all race – ethnic group in the United States are at higher risk than the majority white population (Harris et al, 1995) probably because of a higher frequency of genes associated with DM in the former groups. The genes causing most cases of type 2 DM remain obscure but are the subject of intense investigation (Hanson et al., 1998,Cox et al., 1999). Although type 2 DM is strongly associated with genetic factors, it is undoubtedly heterogeneous in its etiology because a variety of lifestyle and environmental factors have been identified as being risk factors for the condition (Haffner, 1998). In all probability, the cause of type 2 DM lie in environmental and lifestyle factors superimposed on genetic susceptibility. Prominent among these factors is obesity, and approximately 50% to 90% of all patients with type 2 DM are obsess (Harris et al ,1995). A strong association between upper body obesity (central obesity) and type 2 DM prevalence and incidence has been demonstrated. Intraabdominal fat deposition is the important site conveying enhanced risk for type 2 DM (Bergstrom et al ,1990).

Other risk factors include increasing age, high caloric intake, sedentary lifestyle, and low birth weigh. People with impaired glucose tolerance or GDM are also at increased risk, probably because these conditions are preclinical stages of type 2 DM.

2.6.6 Diagnostic criteria for diabetes mellitus

The American Diabetes Association Expert Committee recommended modification of the NDDG/WHO diagnostic criteria. Recognizing the difficulties inherent in performing the oral glucose tolerance test, the criteria now essentially exclude the oral glucose tolerance test as a diagnostic method in routine clinical practice. Instead, the criteria rely on fasting hyperglycemia for the diagnosis of DM. The current criteria for diagnosing DM are shown in Table 2.3. DM can be diagnosed by the presence of the classic signs and symptoms of DM and unequivocally elevated blood glucose levels; by elevated fasting plasma glucose; or by elevated plasma glucose at 2 hours after a 75- g oral glucose challenge. The latter method, however, is not recommended in clinical practice.

Table 2.5 Diagnostic criteria for diabetes mellitus, impaired fasting glucose, and normal fasting glucose

Diabetes
Symptoms of diabetes plus casual plasma glucose ≥ 200 mg/dL
OR
Fasting plasma glucose ≥ 126 mg/dL, confirmed by repeat testing on a different day
OR
Plasma glucose ≥ 200 mg/dL at 2 hours after a 75 – g oral glucose challenge, confirmed by repeat testing on a different day. This method is not recommended for routine clinical use.
Impaired fasting glucose
Fasting plasma glucose ≥ 110 – 126 mg/dL
Normal fasting glucose
Fasting plasma glucose ≥ 110 mg/dL

Symptoms of diabetes include such classic symptoms as polyuria, polydipsia and other acute manifestations of hyperglycemia. Fasting is defined as no caloric intake for at least 8 hours.

For people without the classic symptoms of DM, the fasting plasma glucose should be measured after at least an 8 – hour fast, and a value of at least 126 mg/dL is

indicative of DM. The diagnosis is confirmed if this elevated value is found on a repeat test on a separate day.

The committee also considered whether hemoglobin A_{1c} (HbA_{1c}) might be used or diagnosis of DM. This laboratory test can be measured at any time of the day. It also has relationship with retinopathy that is similar to that of fasting and post challenge glucose. The difficulty with using this as one of the diagnostic methods is that there are many different methods to measure HbA_{1c} that can yield different values even in the same blood sample, and there is not a generally accepted measurement method. A movement toward standardization is now under way, however, and use of HbA_{1c} for diagnosis of DM should be reevaluated in the near future.

The HBA1c assay was introduced in 1989 as a replacement for the total glycohemoglobin test. The HbA1c assay is the measurement of glycated hemoglobin and is regarded as the gold standard method for assessing long-term glycemic control. Erythrocytes are freely permeable to glucose, and studies confirm that the rate of formation of glycated hemoglobin is directly proportional to the ambient glucose concentration.(Bunn et al,1976) Because the average lifespan of an erythrocytes is 120 days, the HbA1c assay reflects the mean blood glucose level over the previous 2 to 3 months.(Braunwald et al, 2001)

2.6.7 Complication of Diabetes

2.6.7.1 Diabetic Ketoacidosis and hyperglycemic (DKA)

DKA is a state of severe metabolic decompensation characterized by hypoglycemia, metabolic acidosis, and increased total ketone bodies or ketoacids. Ketoacidosis result from insulin deficiency and excess counterregulatory hormones including glucagon, catecholamines,cortisol, and growth hormone. The insulin deficiency of DKA can be absolute, as is usually the case in patients with autoimmune type 1 diabetes, or the insulin deficiency can be relative, as in patients with type 2 diabetes in the presence of stress or intercurrent illness that causes sudden worsening of insulin resistance and impairment of insulin secretion .

Symptoms and Signs: clinical features of DKA at presentation can be non-specific, but in general, patients complain of polydipsia and polyuria for several days prior to the development of ketoacidosis. Type 1 diabetes patients with DKA tend to have a shorter prodrome before presenting for medical attention due to the absolute

lack of insulin. Generalized weakness, weight loss, and gastrointestinal symptoms including nausea, vomiting, and abdominal pain are usually present on admission. Abdominal pain, sometimes mimicking an acute abdomen, is especially common in children. (Guillermo, 2006)

2.6.7.2 Hypoglycemia in diabetes

Typically blood glucose levels are tightly regulated between 70 and 150 mg/dl in healthy persons.

Hypoglycemia, defined as blood glucose levels of less than 70 mg/dl, occurs as a consequence of fasting for longer than 24 hours or in disease conditions including insulinomas, galactosemia, hereditary fructose intolerance, Addison's disease, pituitary failure, chronic renal failure, and diabetes.

Allen Whipple first described the clinical diagnosis of hypoglycemia when treating patients with pancreatic insulinomas.This clinical diagnosis has been called Whipple's traid, and includes the symptoms of hypoglycemia, low circulating plasma glucose, and prompt relief of symptoms after glucose administration.

Hypoglycemic symptoms: The onset of hypoglycemic symptoms in healthy subjects occurs at plasma glucose levels between 49 and 58 mg/dl. Symptoms are categorized as neuroglycopenic or autonomic. Neuroglycopenic symptoms are caused by low cerebral glucose levels and include confusion or difficulty thinking, sleepiness, dizziness, weakness, fatigue, slurred speech, hunger, and eventually (if untreated) seizures and coma. Autonomic symptoms result from activation of the autonomic nervous system and include sweating, palpitations, tremulousness, anxiety, and paresthesias. There is a gradual order of symptoms as the blood glucose declines.

Mild symptomatic hypoglycemia is usually easily recognized and treated by the patient. However, if it is unrecognized, as in hypoglycemic unawareness, mild hypoglycemia can lead to severe hypoglycemia, which can require external assistance for treatment and could even lead to seizures, coma, or death. Therefore, although it is critical to avoid severe hypoglycemia, the patient should be educated that asymptomatic or mild symptomatic hypoglycemia should be taken seriously as well in order to maintain awareness and prevent a more serious episode of hypoglycemia.(Guy et al., 2006)

2.6.7.3 Diabetic neuropathy

Diabetic neuropathy encompasses a wide, heterogeneous group of clinical and subclinical syndromes. It is one of the major long-term complications associated with diabetes that can cause considerable morbidity and mortality. Although the diagnosis diabetic neuropathy can vary significantly, the prevalence ranges from 5% to 45% in the United States and other developed countries. Consequently, millions of persons with diabetes are afflicted with diabetic neuropathy. Fifty to seventy-five percent of all ulcerations and nontrauma amputations are a consequence of diabetic neuropathy, and it causes more hospitalizations than all the other diabetic complication combined. (Vinik et al., 2006)

2.6.7.4 Diabetic nephropathy

The natural history of diabetic nephropathy associated with type 1 diabetes is characterized by early presence of microalbuminuria, with subsequent development of hypertension and declining glomerular filtration rate (GFR). In type 2 diabetes, hypertension and albuminuria are generally present on initial diagnosis. Diabetic renal disease occurs with either type 1 or type 2 diabetes, particularly in patients with poor glycemic control, elevated blood pressure (BP), and elevated blood lipids. The pathology and the natural history are similar in both types, with the exception that vascular disease is seen earlier and to a greater extent in type 2 diabetes. Although patients with type 2 diabetes are less likely to progress to overt renal failure, they represent the majority of patients with diabetes who receive maintenance dialysis due to sheer population mechanics (90% of the diabetic population have type 2 diabetes). (Chua and Bakris, 2006)

2.6.7.5 The Diabetic foot

Foot complications and amputation represent one of the most important of all the long – term problems of diabetes, medically, socially, and economically.

The global term *Diabetic foot* refers to a variety of pathologic conditions that affect the feet of people with diabetes. Neuropathy is a major contributory factor in the pathogenesis of foot ulceration and of Charcot ’s neuropathic arthropathy (CN). Often neuropathy can be implicated in the causal chain ultimately resulting in amputation. (Boulton and Armstrong, 2006)

Foot ulcer are lesions that involve a skin break with loss of epithelium; they can extend into the dermis and deeper layers, sometimes involving bone and muscle.

Amputation is the removal of a terminal, nonviable portion of the limb. Foot ulceration is the end-stage complication of neuropathy and vascular disease, and the risk of developing this end stage is much greater than the risk of reaching end-stage sequelae of retinopathy or nephropathy.

Progress has been made in our understanding of the pathogenesis and management of the diabetic foot since the 1980s. Publish research on the diabetic foot has increased from 0.7% in 1980 to 1988 to at least 2.7% since 1999 as indexed in the National Library of Medicine's Pubmed database. Councils and study groups have been formed in both the European Diabetes Association and the American Diabetes Association, and the International Working Group has published an International consensus booklet on the diabetic foot.

2.6.7.6 Diabetic retinopathy

Retinopathy is a major cause of morbidity in patients with diabetes. It remains the primary cause of new blindness in most industrialized countries. After 20 years of disease, evidence of retinopathy is present in almost 100% of patients with type1 diabetes and 50% to 80% of those with type2 diabetes.

The incidence of blindness is 25 times higher in patients with diabetes than in the general population. Diabetic retinopathy (DR) is the most common cause of blindness in middle-aged people, accounting for at least 12 % of all new cases of visual loss in the United States each year. The presence of severe retinopathy may also be a risk factor for death due to ischemic heart disease.

The duration of the diabetes is the most important predictor of diabetic retinopathy. Patients who have had type 1 diabetes for 5 years or less rarely show any evidence of retinopathy. However, 27% of patients who have had type1diabetes for 5-10 years and 71% to 90% of those who have diabetic retinopathy. After 20 -30 years, the incidence rises to 95 %, and about 30 % to 50% of these patients have proliferative diabetic retinopathy (PDR)

Treatment of diabetic retinopathy is directed both at prevention, primary by tight glycemic control, and at treatment of established ocular disease. Because the

rate of progression may be rapid and therapy is at least partially effective, it is also important to regularly screen diabetic patients for the development of retinal disease. (Khan et al., 2006)

2.7 Relevant researches

2.7.1 Health policy

Pithayarangsrith (2004), studied about in UC scheme in Thailand using policy process approach to examine the four elements of context, content, process and actors using qualitative method by interviews, documentary and media analysis, focusing on group discussions . She suggested that Thailand has a tightly-knit, medically-dominated policy community, which includes bureaucrats, professionals and academics, and which continued to influence policy during both policy formulation and implementation. The implementation was top-down policy process .With the limitation of time and lack of preparation , policy implementation had problems, such as understanding of health personnel at all level , management system , reliability of the clients. But leadership is important to overcome the obstacles.

Jindawatana , Pipatrotechanakamon (2004), studied about policy development of UC in Thailand.Using compound method such as policy process (in 4 elements; context, content, process and actors) , the stages heuristic ,cause and effect after policy implementation, and model of policy. This research suggested that the UC scheme is used as incrementalism policy model. This policy has three of well policy criteria: legitimacy, congruency, and feasibility. In content of policy, there are more benefits for people. However, the essences of the policy in some parts were changed from the beginning phase. This policy is accomplishment because using the triangle that moves the mountain strategy. However, there were not well-prepared health care service reforms, such as organization system design, manpower system, system management, network, etc. Therefore, this policy had many obstacles that had to overcome for achieve its intended objectives.

Nathan.et al (2005) ,Using a childhood obesity summit held in Australia in 2002 as a case study, this paper examines how evidence was used in setting the agenda, influencing the Summit debate and shaping the policy responses which emerged. The

study used multiple methods of data collection including documentary analysis, key informant interviews, a focus group discussion, and media analysis. The resulting data were content analyzed to examine the types of evidence used in the Summit and how the state of the evidence base contributed to policy-making. The Summit demonstrated that policy action will move forward in the absence of strong research evidence. Where powerful and competing groups contest possible policy options, however, the evidence base required for action needs to be substantial. As with tobacco control, obesity control efforts are likely to face ongoing challenges around the nature of the evidence and interventions proposed to tackle the problem. Overcoming the challenges in controlling obesity will be more likely if researchers and public health advocates enhance their understanding of the policy process, including the role different types of evidence can play in influencing public debate and policy decisions, the interests and tactics of the different stakeholders involved and the part that can be played by time-limited yet high profile events such as Summits.

Lin and Robinson (2005), Policy development in public health has never been confined to a set of health programs, and in 2003/04, the lead was often taken from outside the health sector. Most significant was the adoption of the National Agenda for Early Childhood, pushed by public health advocates for child health since the mid 1990s. The National Public Health Partnership responded by coordinating a scoping of child health strategies across Australia. Elsewhere in Government, "Promoting and Maintaining Good Health" was adopted as one of the National Research Priorities. Healthy ageing also emerged as a policy theme in Ageing Research.

Leethongdee (2007), examined the implementation of Thailand's universal coverage (UC) health care reforms, using a 'policy ethnography' approach which used mixed method (documentary analysis, semi-structure interviews, focus group discussion) to investigate the perspectives of local policy actors. He suggested that it was generally actors at the higher levels of the provincial health administration who had actual potential to influence the way the reforms were implemented. However, there were interesting examples where middle-level provincial actors gained influence at particular junctures of the implementation process , usually either when they were in a strategic position with regard to the rool-out of particular policy, or if they could get support from powerful allies higher up the MoPH hierarchy. The degree of engagement

and knowledge of lower-level actors was more limited, and many at this level saw the reforms as overly top-down. Over the period covered by the study, the relative influence of top-down and bottom-up influences ebbed and flowed. There was cycle whereby local adaptations usually led to a reaction at the center, and further policy statements and top-down directions. Many problems arose in implementation the UC reforms, including difficulties in achieving progress on the original objectives of reducing geographical inequalities of funding and workforce distribution, problems in allocating resources fairly within the local health system, lack of progress in developing primary care, and tension between curative and preventive approaches.

Soonthornnonta, Meechart (2007), investigated and identified the influence of dispositions or attitudes of implementers who are in public and private sector in the policy implementation process by using the conception of framework of Van Meter and Van Horn's policy implementation theory and choosing the Skill Development Promotion Policy for labor to be case study. The scope of study was the participation between the Entrepreneur and Department of Skill Development in policy implementation process. The results of the study were analyzed and developed to be a model of policy implementation. In the research, sample groups were the high –level bureaucracy of Department of Skill Development and the entrepreneur of industry, commerce and service business in Bangkok area. Data collection was made by using the in- depth interview and questionnaire. Soonthornnonta, and Meechart suggested that the enforcement was the factor having most influences in policy implementation process . The factor having positive relation to performance were enforcement, dispositions or attitudes of implementers; and the enforcement factor is the most influence to the performance in policy implementation process in case of the Skill Development Promotion Policy for labor in Thailand.

2.7.2 Social support and self efficacy

Iso (2004)**,** examined prospectively the association between social support and risk of coronary heart disease and stroke incidence and mortality within a cohort of 44 152 Japanese men and women aged 40 to 69 years, free of previous diagnosis of cancer and cardiovascular disease. A total of 301 cases of newly diagnosed coronary heart disease, 1057 strokes, 191 coronary heart disease deaths, and 327 stroke deaths occurred between the baseline questionnaire (1993–1994) and the end of follow-up in

January 2004. The result illustrated that low social support was associated with a higher risk of stroke mortality, especially for Japanese men. However, social support was not associated with stroke incidence, suggesting social support may be more important in promoting recovery than in preventing disease. The findings have health policy relevance given the current decline in the marriage rate in Japan as well as the rapid population aging in that society. Low social support was associated with higher risk of stroke mortality in men. However, social support was not associated with stroke incidence, suggesting social support may be more important in stroke prognosis than preventing incidence.

Siriwattanapornkul (2007),investigated the relationships between selected factors and blood glucose level among patients with diabetes mellitus type II received health care services in Kaoleaw hospital, Nakhonsawan Province. The 249 samples who had blood glucose level more than or equal to 126 mg% were selected by simple random sampling. The research instruments were factors related to blood glucose level questionnaires which were approved the content validity by 5 experts and the reliability of dietary control behaviors, exercise behaviors, medicine taking behaviors, family social support and receiving services, were .841, .842, .839, .833 and .838, respectively. Data were analyzed by using percentage, mean, standard deviation, Pearson's Product Moment Correlation and Chi-square.The results indicated that dietary control behavior was negatively related to blood glucose level among patients with diabetes mellitus type II at .05 of significance level. Moreover, family social support was positively related to those of them with statistical significance($p < 0.005$). This results suggested that dietary control behaviors and family social supports were important related factors for controlling blood glucose level among patients with diabetes mellitus type II.

Phalasarn (2011), studied the effectiveness of health education program by application of theory of Planned Behavior and Social Support for prevention alcohol drinking behavior among secondary level 4 in Khongchaiwittayakhom School, Khongchaipattana Subdistrict, Khongchai District, Kalasin Province. The pretest-posttest two groups design was used .The samples were 82 students and divided to be the experimental group 40 students and comparison group had 42 students. The experimental group received health education program that was applicated from the theory of Planned

Behavior by Icek Ajzen and Social Support by House. The strategies used in the program were role playing, watching the VDO clips, group discussion, providing a hand book of alcohol prevention, exchanging experience, and receiving social support from teacher and guardians. The duration of the experiment was 12 weeks. Data were collected by questionnaires before and after experiment. Descriptive statistic used frequency, percentage, mean and standard deviation. For comparing variables between groups the Paired Sample t-test and Independent t-test were employed.The results reflected that this health education program had enough effectiveness in alcohol consumption preventive and suggested to be applicated in other areas.

Thongnoi (2011) This research study design was experimental education. The research aims to study the application of the Health Belief Model with social support to improve preventive behavior for cerebrovascular disease among hypertension patients in Tumbon Nonpayom Chonnabot district, Khonkean Province. The sample consisted of 74 hypertension patients, 37 of whom were in the experimental group and 37 in the control group.The Experimental group received interventions included VDO presentations , demonstrations , guides and brochures, and home visits by our health volunteers. Data were collected by questionnaire. The statistical analysis descriptives included percentage, mean and standard deviation and analytical statistics included the paried sample t–test, and the independent sample t-test. These differences were compared before and after treatment of experimental group and between groups at the 0.05 level of significance. The main results were as follows : after the experiment showed that the experimental group scored a higher mean than before the experiment, and a higher mean than the control group for knowledge of cerebrovascular disease, perceived susceptibility of cerebrovascular disease, perceived severity of cerebrovascular disease, perceived benefits of procedure as instructed, and received social support. These scores are statistically significantly higher than before the experiment (p-value<0.001).

Mansin (2009) examined the effectiveness of health education teaching by applying the self-efficacy theory and social support enhancing exercise-promoting behavior among coronary artery bypass graft surgery patients in Siriraj hospital. Of the 58 cases. The samples were divided into 28 cases in the experimental group and 28 cases in the comparison group. This was a purposive sampling with designated

qualifications. It was found that after the experiment, the experimental group achieved higher averages score for the perception of self-efficacy related to exercise than before the experiment, with statistical significance ($p< 0.001$) and higher than the comparative group, but without statistical significance ($p< 0.81$). The average scores for positive expectation regarding exercise were higher than before, but not significant ($p=0.124$), and higher than the comparative group, but not significant ($p=0.315$). Exercise behavior, in general, among the experiment group was significantly more frequent than among the comparative group ($p=0.011$). The program of health education teaching, applying self-efficacy theory and social support, appropriately encouraged exercise behavior among coronary artery bypass graft surgery patients. Education providers serving patients in the public health stations should, therefore, further apply this program appropriately with this group of patients and other patient groups.

Layanun (2011) studied the benefits of using the PROMISe model to work towards sustainable “3-self ” Health behavior changes(self-efficacy, self-regulation and self-care) in a Weight and Disease Reduction program conducted for at Lerdsin Hospital. The research, Cross-sectional study, was divided into two parts. Total of 302 people participated in the first part of this research and 173 people participated in the second part. The results showed the relationship between the 3-self health behaviors, BMI value and satisfaction after finishing the program and 6 months later. The PROMISe model did indeed influence the sustainability of the 3-Health Behavior changes, and subsequent weight loss. The most influential factors of PROMISe model were result-based management, positive reinforcement, and optimism.

It could be concluded that this policy is top-down, the policy implementation needs the essential factors to achieve success as the researcher could discover that social support was the most efficient and successful factor in the preliminary part of this study. The examination of this finding was undertaken by applying the social support including self-efficacy to solve increasing complications in diabetes patients as the researcher created the conceptual framework and the new diabetes care service system as follows.

Phase I

Quantitative study: Survey

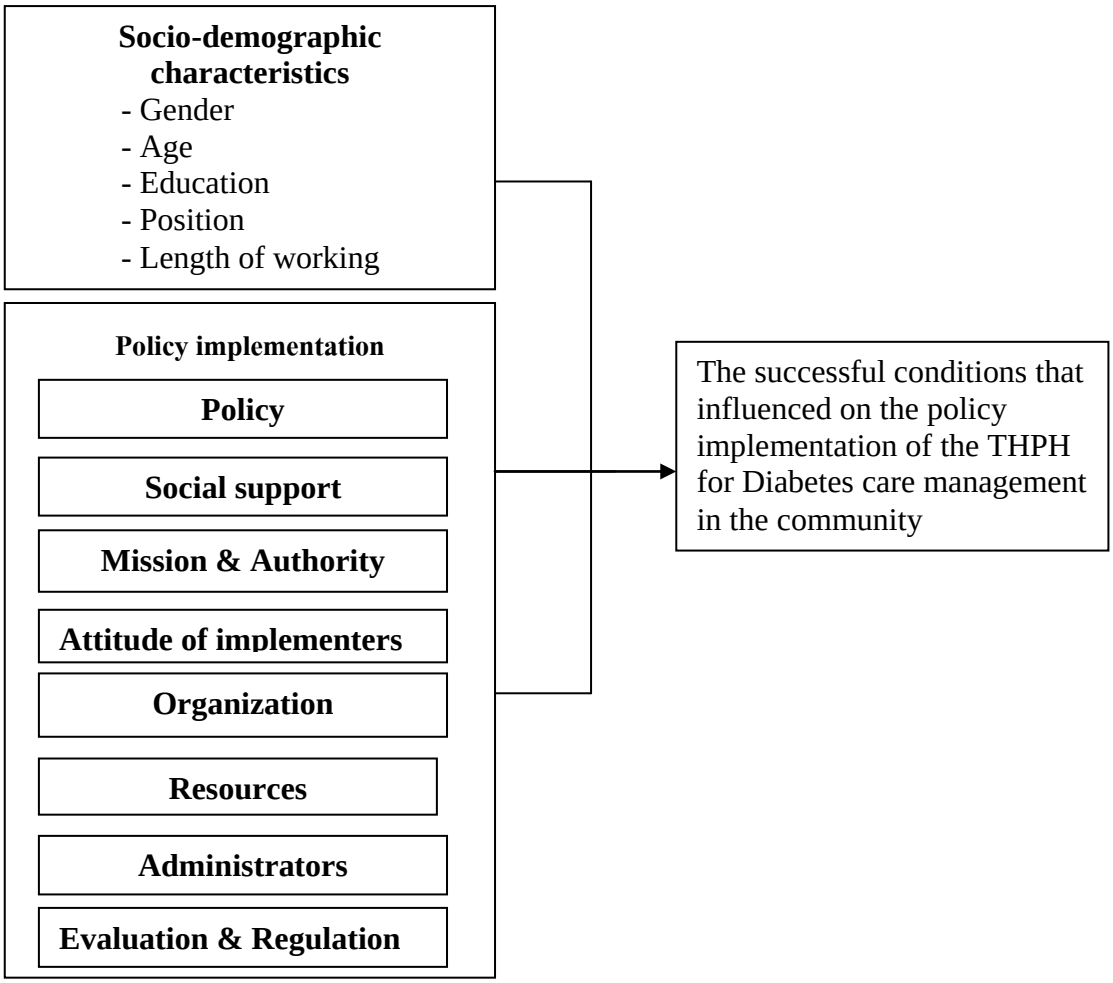


Figure 2.18 Conceptual framework phase I

Phase II

Qualitative study: - In-dept interview
- Observation

After Phase I and Phase II

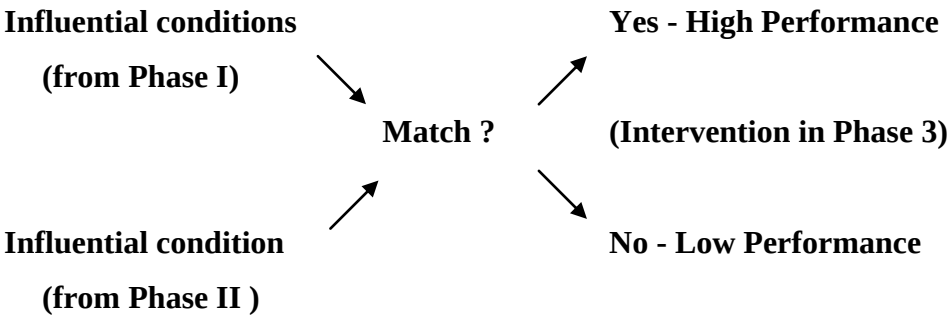


Figure 2.19 Conceptual framework phase II

Phase III

Quasi- experiment

ID **DV**

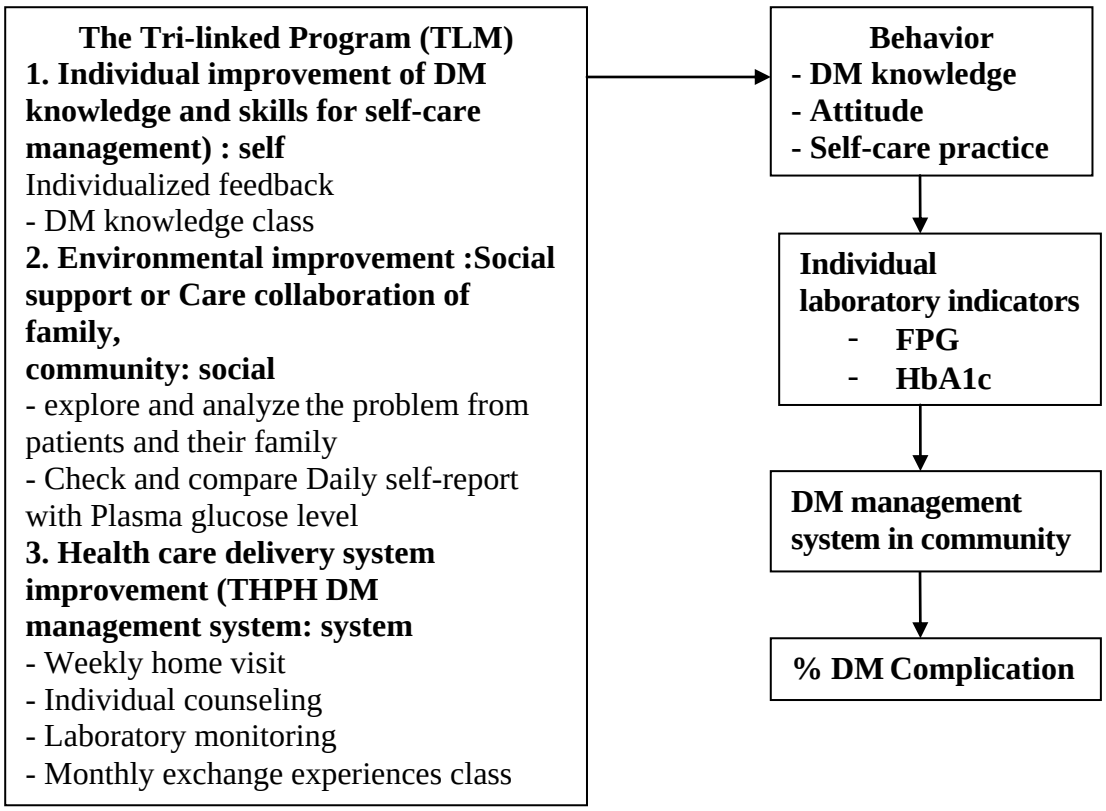


Figure 2.20 Conceptual framework phase III of the research

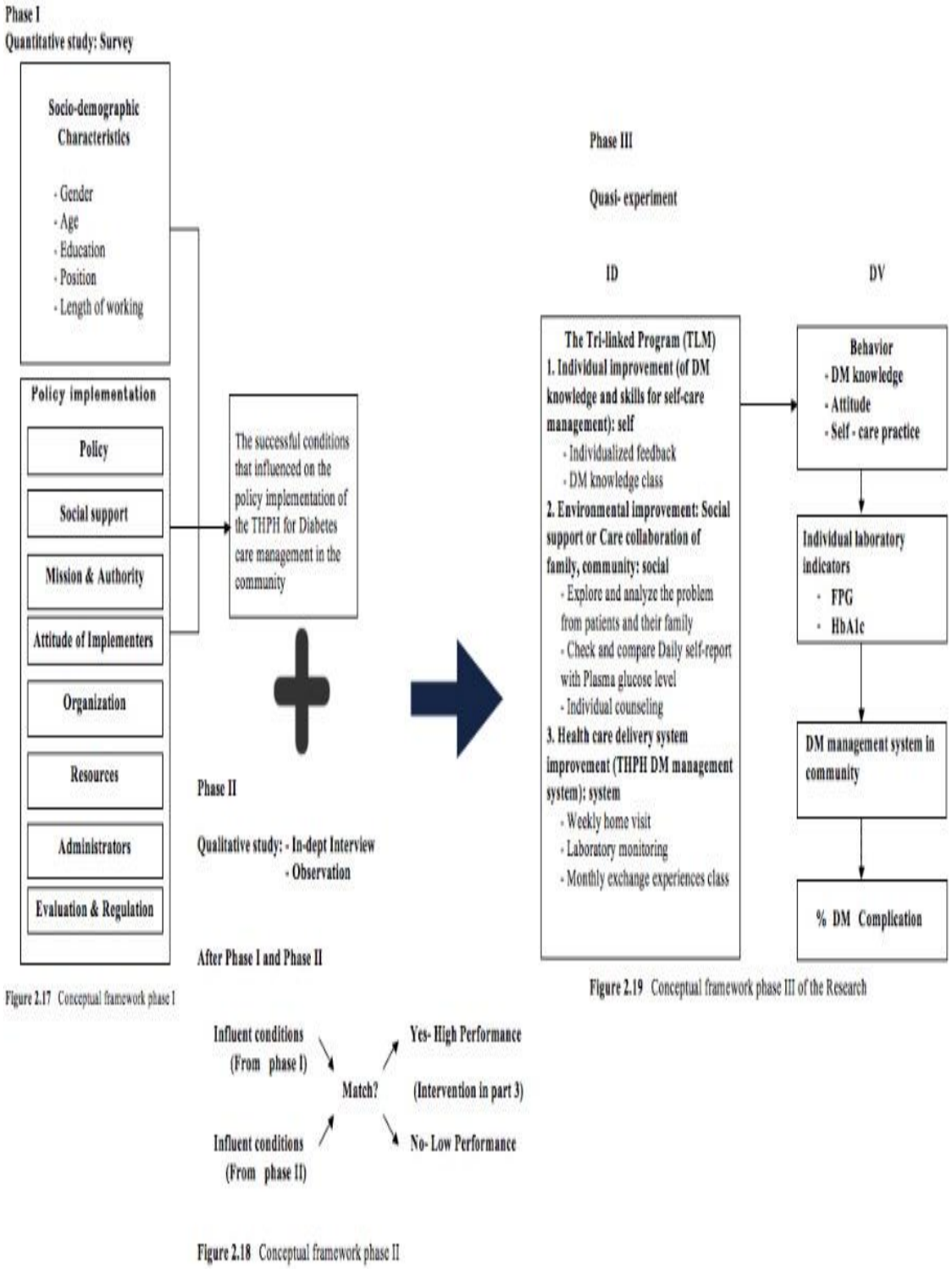


Figure 2.17 Conceptual framework phase I

Figure 2.18 Conceptual framework phase II

Figure 2.19 Conceptual framework phase III of the Research

Figure 2.21 Conceptual framework of the research (three phase)

CHAPTER III

RESEARCH METHODS

This chapter discusses the method used to explore the study questions. The method included qualitative study and quantitative study which was organized in the following way:

1. Research design
2. Pattern of Research
3. Study area
4. Study Population and Samples
5. Sample Size
6. Intervention
7. Methodology
8. Instruments and Data Collection
9. Ethical Considerations
10. Data analysis

3.1 Research Design

This research employed both quantitative and qualitative methods. It consisted of a cross-sectional survey, in-depth interview, and a quasi-experimental (non –equivalent pretest post test control-group) study design. The intervention had been tried out and improved prior to introducing it to the intervention group.

The researcher contained a field practice. The intervention was developed after analyzing the quantitative data, qualitative data, and information that had been gathered by subject in-dept interviewing. In order to evaluate the effects of the intervention, this research was designed as a quasi- experimental (non –equivalent pretest post test control-group) study design. Two Tambon Health Promoting hospitals (THPHs) from same district in Ubonratchathani Province were purposively selected in order to solve the problem of DM management system in community. The two Tambon Health Promoting Hospitals (THPHs) are far from each other approximately 20 kilometers and have similar socio-economic,

geographical, and local political contexts. The Nonkasem Tambon Health Promoting Hospitals (THPHs), Warinchamrap District was assigned as an experimental group, and Ratsamran Tambon Health Promoting Hospitals (THPHs),Warinchamrap District, as a comparison group. The same intervention was provided to the comparison group after the research had finished the intervention in the experimental group.

Phase I : Survey by questionnaires (a cross-sectional survey)

Phase II : In-depth interview, Observation

Phase II : Quasi-experiment.

3.2 Pattern of Research

The research design of phase III was a quasi–experiment; non-equivalent group comparison design. This design is the counter part of Pre-test, Post-test control group experimental design, with the difference that, here the comparison groups are not selected by random allocation, but by the researcher using her subjective judgment. Two unions with almost similar characteristics were selected.

The research design is shown as follows:

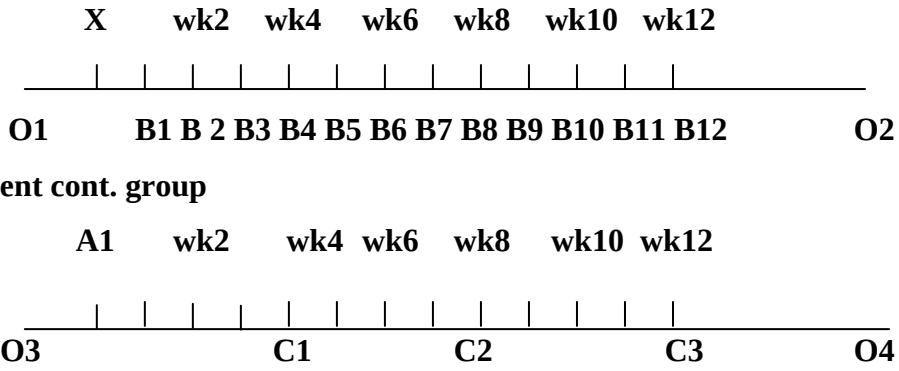
		X →	
		O1	O2
	Exp. Group		
	Non-equivalent cont. group	O3	O4

O1 O3 Data collection before the intervention program.

O2 O4 Data collection after the intervention program**.**

X Intervention (successful conditions)

Information as follow:



O1 O3 refers to data collection before the intervention program by questionnaires; individual information, DM knowledge, skills for self diabetes care and the opinion of social support , and checking for finger plasma glucose and HbA1c.

O2 O4 refers to data collection after the intervention program by questionnaires; DM knowledge, skills for self diabetes care, the opinion of social support, and the opinion of the new DM patients care system.

X refers to the new DM management system (Intervention). Activities are DM knowledge class, weekly finger plasma glucose, home visit and checking daily self- report and individual counseling for both the participants and their families or caregivers, and exchange of the participant's experiences, HbA1c examination.

B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 refer to activities of the new DM management system.

A1 refers to regular practice of the Tambon Health Promoting Hospital **(THPH)**. Activities are DM knowledge class, home visit in uncontrolled plasma glucose level cases, and checking for finger plasma glucose every month.

C1 C2 C3 refer to regular practice of the Tambon Health Promoting Hospital **(THPH)**: checking for finger plasma glucose every month.

wk1 wk2 wk3 wk4 wk5 wk6 wk7 wk8 wk9 wk10 wk11 wk12 refer to the period of the DM patients participated in program.

wk 1 refers to the period of the DM patients who participated in program first week.

wk 2 refers to the period of the DM patients who participated in program second week.

wk 3 refers to the period of the DM patients who participated in program third week.

wk 4 refers to the period of the DM patients whoparticipated in program forth week.

wk 5 refers to the period of the DM patients who participated in program fifth week.
wk 6 refers to the period of the DM patients who participated in program sixth week.
wk 7 refers to the period of the DM patients who participated in program seventh week.
wk 8 refers to the period of the DM patients who participated in program eighth week.
wk 9 refers to the period of the DM patients who participated in program ninth week.
wk 10 refers to the period of the DM patients who participated in program tenth week.
wk 11 refers to the period of the DM patients who participated in program eleventh week.
wk 12 refers to the period of the DM patients who participated in program twelfth week.

3.3 Study Area

All of phase I ,phase II and phase III were Ubonratchathani province

Study areas were purposively selected. The criteria for area selection were:

1 The two THPHs, experimental group and comparison group, had similarities in socio-economic status, geographical environment, and political context.

2 No intervention that could affect the research outcomes in the two groups existed.

3 The total number of type two diabetic patients in THPH was at least equal to the sample size.

There were 325 THPHs in 25 districts of Ubonratchathani Province. Nonkasem THPH was selected and assigned for the experimental group, and Ratsamran THPH for the comparison group.

3.4 Study Population and Samples

3.4.1 Study population Phase I : A cross-sectional survey

The Tambon Health Promoting Hospitals personnel of 325 THPHs in 25 districts in Ubonratchathani Province were purposively selected. The first part of this study was the collection of the successful conditions of THPH which was done by the implementers at all levels by survey. The second part of the study was conducted in order to determine the successful conditions (factors) that influenced the policy implementation of the THPH for diabetes care management in the community from

both of THPH which succeeded in diabetes care management in the community and those THPH which failed in diabetes care management in the community. Analysis of data was carried out the influential conditions that influenced the policy implementation of the THPH for diabetes care management in the community.

3.4.2 Study population Phase II: In-depth interview

The Phase II is the process of qualitative. 13 respondents were the health personnel's at all levels. Although the survey provide information a more detailed. The previous instruments have difficulty to elicit more information, such as, the use of successful strategies to achieve the objectives by implementers at all levels who were involved in this policy together with stakeholders. Using the main data collection of qualitative study is in-depth interview that should reveal which strategies; the successful conditions were used by the implementers, and their viewpoint of those strategies. (Each interview taked approximately one hour).

The data from this phase will be analyzed by the diabetes management of THPH policy in four dimensions (context, content, process and actors). This method should reveal the point of view of the implementers at all levels who were involved in this policy. This should establish implementers' understanding of the policy, provide more detail about the strategies used by the different level implementers, and identify the conditions they thought were the most influential conditions to achieve the objectives in diabetes care management of THPH. In short, this phase was conducted to confirm the successful conditions from phase I.

After phase I and phase II , it was the process of distinction and summary of the most influential conditions of THPH to achieve the objectives in diabetes care management. The conditions which were mentioned in both phase will be successful conditions that the THPHs needed to accomplish the objectives. These successful conditions were built to be the intervention in phase III.

3.4.3 Study population Phase III: Quasi-experiment

The study population in this phase was type 2 diabetic patients attending diabetic clinics at Nonkasem Tambon Health Promoting Hospital and Ratsamran Tambon Health Promoting Hospitals. The participants were also residents there. Samples for the present study were selected by using the following criteria:

3.4.3.1 Inclusion criteria for the selection of Diabetic Patients

The Patients who participated in this study would meet the following criteria.

1) Type-2 diabetic patients diagnosed by a medical doctor to have the disease and treated by oral medication only.

2) Onset of DM illness was first diagnosed between 1-12 years.

3) Fasting plasma glucose was higher than 130 mg/dl at least two consecutive times before entering the project.

4) Aged 30-65 years old.

5) Not being pregnant

6) Fully ambulatory.

7) Able to read and write Thai or had at least an offspring that was able to read the hand book for them

Able to hear, see, and speak.

8) No DM complications, and other complications that might disturb the participation in project activities and be able to participate in the program.

9) Living in study area (Tambon Nonkasem, Tambon Ratsamran)

3.4.3.2 Exclusion criteria

1) Receiving insulin therapy

2) Having diabetes-related complications

3) Not living in study area.

4) Not willing to participate in the study

3.5 Sample Size

3.5.1 Phase I: a cross-sectional survey

The phase I of this study will be the collection of the successful conditions of THPH which will be done by survey from the implementers at all levels health personnel of the 325 THPHs in Ubonratchathani Province. The survey should reveal classification, number of staff, and the opinion of health personnel which consisted of 8 sets: Policy, Mission & Authority, Attitude of Implementers, Social support, Organization, Resources, Administrators, Evaluation & Regulation and diabetes care management of THPH in the community in order to discover the successful conditions

(factors) that have influenced on the policy implementation of the THPH from both of those THPH which have been successful in policy implementation of the THPH and those which have been failed in policy implementation of the THPH.

The sample size for finite population (Cohen, 1988) was employed.

$$N = \frac{\lambda(1-R^2_{Y.A,B})}{R^2_{Y.A,B} - R^2_{Y.A}} + w \quad \text{---------- (1)}$$

$$\lambda = \lambda_L = \frac{(1/V_L) - (1/V)}{(1/V_L) - (1/V_U)}(\lambda_L - \lambda_U) \quad \text{---------- (2)}$$

When N = Sample size,

Λ = Correlation value between number of independent variables and Power (from Table 9.4.2, Cohen,1988) depend on the power, significance level and variables.

$R^2_{Y.A,B}$ = Coefficient of full model

$R^2_{Y.A}$ = Coefficient of Reduce model ($R^2_{Y.A,B}$ - $R^2_{Y.B}$)

$R^2_{Y.B}$ = R change

W = number of independent variables which exclude from the tested-variables

U = independent variables which need to test

V = N-U-1

$$N = \frac{19.5\ (1 - 0.166)}{0.166 - 0.111} + 0$$

= 295.7 (used n = 300)

Simple random sampling was performed for the population of 325 THPHs in 25 districts of Ubonratchathani province. Using 75 samples / district, from this 25)

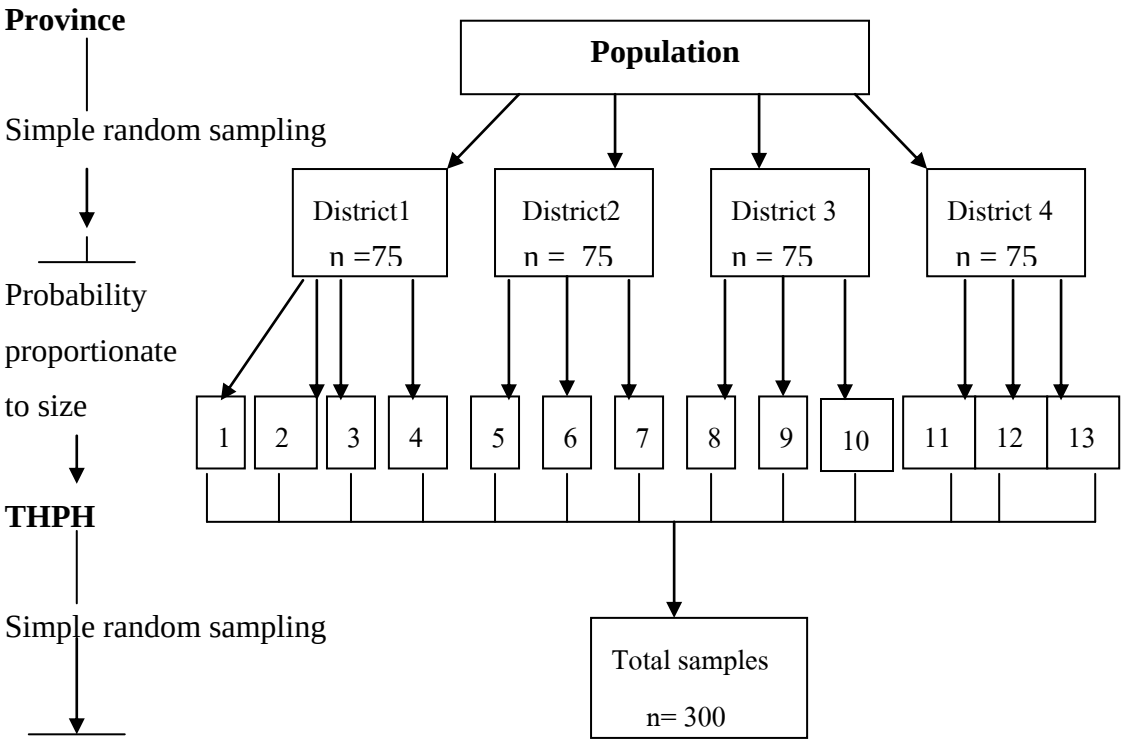


Figure 3.1 Sample sampling of phase I

The survey instrument is a questionnaire and has three parts:

1. The first part will ask for the socio-demographic information including age, gender, marital status, educational level, position, and length of working.

2. The second part will ask about the opinion of health personnel in policy implementation such as Policy, Mission & Authority, Attitude of Implementers, Social support, Organization, Resources, Administrators, and Evaluation & Regulation.

3. The third part will ask about the diabetes care management of THPH in the community.

3.5.2 Phase III

In order to estimate the sample size in the intervention group and the comparison group, the formula for estimating independent samples for comparison of means between two groups (one-sided test) in experimental study (Worapongsathorn, 1997 : 433) is employed.

$$n = \frac{(Z\alpha + Z\beta)^2 \, 2 \, \sigma^2}{(\mu 1 - \mu 0)^2}$$

Where $Z\alpha$ = 1.645

$Z\beta$ = 1.282

σ = Standard deviation of DM knowledge among population

σ = 0.466 (Chaveepojnkamjorn, 2008)

$\mu 1 - \mu 0$ = Difference of means of DM management between the study group and the control group = 0.29 (Chaveepojnkamjorn, 2008)

$$n = \frac{(1.645 + 1.282)^2 \times 2 \, (0.466)^2}{(0.29)^2} = 44.24$$

n = 45 (adjusted for anticipated response rate and drop off rate)

3.6 Intervention

The Tri-linked Model (TLM) is the concept of self efficacy & self- care activities, social support, and DM management system of THPH. The Tri-linked Model (TLM) assigned consisted of these activities:

3.6.1 Individual improvement of DM knowledge and skills for self-care management (self)

3.6.1.1 Individualized feedback about DM in terms of their meaning and potential impacts on his or her health by registered nurses in the intervention group. Evidence base assessment of DM, which included DM knowledge, skills for self –care activities, fasting plasma glucose level and Hemoglobin A1C (HbA1C) level had been conducted in both groups prior to the individualized feedback.

3.6.1.2 DM knowledge class was performed in the intervention group after the individualized feedback**.**

The objective was to encourage good human relationships among participants and researcher, research assistants, and improve DM knowledge and skills for self – care activities.

3.6.2 Environmental improvement: Social support or care collaboration of family, community (social)

3.6.2.1 Explore and analyze the problem from patients and their family.

3.6.2.2 Daily self-report was performed in the intervention group by the participants or caregivers in the case where the participants were not able to write or read in Thai.This activity was conducted to analyze and dietary controlled of the patients in order to plan on home visit.

3.6.3 Health care delivery system improvement (THPH DM management system (system)

3.6.3.1 Finger Plasma Glucose examination was undertaken in the intervention group by the trained village health volunteers (VHVs) before a one- day home visit.This activity was conducted to analyze and monitor blood sugar level of the patients in order to plan on home visit.

3.6.3.2 Home visit was performed as weekly home visit in the intervention group by the village health volunteers (VHVs), Tambon health personnel, researcher and research assistants. Training for the village health volunteers (VHVs), Tambon health personnel and research assistants about home visit was conducted prior to home visit activity. Daily self-reports were collected during home visit.

This activity was conducted to encourage good human relationships among participants, caregivers and the village health volunteers (VHVs), Tambon health personnel, researcher, research assistants, and to improve DM knowledge and skills for self-care activities; Daily self - report were collected during home visit.

3.6.3.3 Individual counseling was conducted during home visit. The participants who could not controlled diet, were physical inactive, were lacking self-care activities, and had high level of fasting plasma glucose were given counseling during weekly home visit on increasing dietary controlled, physical activity, self-care activities, and proper fasting plasma glucose by well trained VHVs, Tambon health personnel and research assistants.

3.6.3.4 Monthly exchange experiences class

The participants in the intervention group were invited to attend a monthly exchange experiences class. The participants who had significantly dietary controlled, self-care activities and proper fasting plasma glucose were invited to relate

their experiences on how did they do.This activity was conducted to exchange the participant experiences related to solving their illness and self-care activities.

3.6.3.5 HemoglobinA1c (HbA1c) examination was performed after the intervention program both of intervention group and comparison group.This activity was conducted to examine long-term glycemic control in patients with diabetes mellitus (DM) in both groups.

3.7 Methodology

The research implementation was divided into 3 phase as follows:

3.7.1 Preparatory Phase

3.7.1.1 Identifying the successful and the unsuccessful conditions that influenced on policy implementation of THPH. Both of quantitative and qualitative data collection by the researcher and research assistants was conducted by questionnaires and in-dept interview of the participants in the study group respectively.

3.7.1.2 Development of Tri-linked Model (TLM).

After the literature review, phase I and phase II analysis, the researcher derived the successful conditions that influenced on policy implementation of THPH.

3.7.1.3 Training of research assistants

The researcher assistants were classified into 3 groups: facilitators, home visitors and registered nurses. The facilitators were those who checked the finger plasma glucose for the intervention group (VHVs). The home visitors were the health personnel in Tambon Health Promoting Hospital (THPH) Nonkasem. The home visitors conducted not only home visit but also individual counseling. The registered nurses played the roles of individual feedback, monthly exchange experiences class, and checking HbA1c. The mentioned researcher assistants were trained according to their assigned roles and responsibilities.

Two weeks before the onset of the actual study, the researcher explained the objectives and the procedure of this research to the participants of the intervention and the comparison group, and the researcher collected relevant information by questionnaires, checking for fasting plasma glucose and Hemoglobin A1C (HbA1C).

For the comparison group, normal practice of the Tambon Health Promoting Hospital personnel was provided.

3.7.2 Operational Phase

The Tri-linked Model (TLM) was provided for the intervention group (n=45). Those activities were: Individualized feedback, DM knowledge class, home visit, individual counseling, and monthly exchange experiences class. For the comparison group, normal practice of the Tambon Health Promoting Hospital (THPH) personnel was provided. The followings were the activities intervened:

3.7.2.1 Intervention Procedure

1) The 1st Tri-linked Model (TLM) Program Activities

1st week : DM knowledge class

This activity was conducted to encourage good human relationship among participants and the researcher, and her research assistants,and to improved DM knowledge and skills for self-care activities. Activities were conducted as follows:

(1) The researcher welcomed the participants.

(2) The researcher and the research assistants introduced themselves and explained the objectives of the activities and roles of the participants.

(3) Goal setting and commitment was used for self-care activities (e.g. controlling fasting plasma glucose, dietary control, physical exercise, medicine compliance, and complication observation.)

(4) The researcher presented the flip chart explaining the nature and problems of diabetes mellitus (e.g., causes, sign and symptoms, pathology, complications, and diabetes care).

(5) The researcher demonstrated and participated in practical dietary control on food exchange tables and menu to select appropriate food for diabetic patients and how to prepare tasty dishes for them. Nutritional label (ingredients) was taught and practiced.

(6) The researcher summarized what has been achieved so far and encouraged the participants to go through self-care activities, especially, dietary control, distributed illustrative material (DM handbook), daily self-report, and she explained how to record it. Questions from the participants were answered.

(7) The researcher made appointment with the participants for the date and time of the second meeting.

2) The 2nd Tri-linked Model (TLM)Program Activities

2nd, 3rd, 5th, 7th , 9th , 10th , 11th week: Home visit & Individual counseling

This activity was conducted to encourage good human relationship among the participants, the caregivers, and the researcher, and the research assistant, and to improved DM knowledge and skills for dietary control, Self report and individual counseling were performed. Activities were conducted as follows:

(1) The researcher and the research assistants performed weekly home visit in the intervention group and their caregivers.

(2) Checking for fasting plasma glucose and classified participants:

(2.1) The participants who control their fasting plasma glucose(FPG) less than 130 mg% : Home visit 2 times every 2 weeks and then home visit every 4 weeks

(2.2) The participants who could not control their fasting plasma glucose (FPG) more than 130 mg%: Home visit every week.

(3) Checking self report from DM handbook and individual counseling both of participants and caregivers.

(4) The researcher summarized and encouraged the participants and caregivers to go through self-care activities.

(5) Made Appointment with the participants for the date and time of the next meeting.

3) The 3rd Tri-linked Model (TLM) Program Activities

4th, 8th 12th week: Monthly exchange experiences class

The objective was to exchange the participants experiences related to solving their illness and self-care activities.

(1) Checking for fasting plasma glucose

(2) The researcher and the research assistants welcomed the participants and asked them to discuss their problems and solutions, exchanged their experiences on self care and how to solve their health problems

(3) Introduced the participants who could well- self-care activities And controlled their fasting plasma glucose less than 130 mg% to share their experience how they were able to do it.

(4) Matching the participants who could well- self-care activities and controlled their fasting plasma glucose less than 130 mg% to be the counselor of the participants who could not control their fasting plasma glucose less than 130 mg%.

(5) The researcher explained about the importance of monitoring blood glucose levels and encouraged those members whose blood glucose level did not yet decrease to try harder to solve that problem.

(6) Giving a certificate to the participants who could well-self-care activities and controlled their fasting plasma glucose to motivate and encourage their DM self-care activities

3.7.3 Evaluation Phase

After Intervention Program, Post data collection by questionnaires, checking for fasting plasma glucose (FPG) and hemoglobin A1C (HbA1C) were performed in both intervention group and the comparison group

3.8 Instruments and Data Collection

3.8.1 Phase I: To explore successful conditions of THPH policy implementation. Questionnaires were composed of 3 parts:

3.8.1.1 Socio-demographic characteristics of the health personnel and Tambon Health Promoting Hospital (THPH), such as, classification and number of staff.

3.8.1.2 The opinion of health personnel; there were 8 sets as follows:

1) Policy
2) Mission & Authority
3) Attitude of implementers
4) Social support
5) Organization
6) Resources
7) Administrators
8) Evaluation & Regulation

3.8.1.3 Diabetes care management of THPH in the community

3.8.2 Phase II: To confirm successful conditions of THPH policy implementation. Using In-depth interview form

This study used a loosely structured sequence of opened-ended questions. An interview aimed to cover a number of predetermined questions and/or special topics, but do so in a flexible way. The questions were typically asked in a consistent order, following a prepared 'interview guide', but the respondents were given freedom to response and digress. The researcher as interviewer could probe beyond the prepared questions if answers develop in interesting ways (Berg, 2001; Bryman, 2004). Some questions that were not included in the guide may be added as the interviewer picks up on things said by respondents. The questions of this study were mainly 'how' and 'why' questions concerned with how local implementers interacted with the implementation of the DM management in THPH policy. All of interviews were tape-recorded with the participants' permission. The researcher confirmed that all discussions held with them would be guaranteed the greatest degree of confidentially. The advantage of tape – recording was that a verbatim transcription of recorded interviews provides a good basis for analysis.

3.8.3 Phase III: To examine intervention that was developed from successful conditions of THPH policy implementation whether it achieved THPH intended objectives.

Instruments: The instruments used to collect the data in this research were as follows:

1) Glucose portable meter for fasting plasma glucose examination.

2) Home visit record

3) Daily self- report: for participants who recorded their dietary controlled.

4) Interview Questionnaires were composed of 7 parts:

(1) Part 1: Socio-demographic characteristics.

The socio-demographic information included age, gender, marital status, educational level, monthly income, etc.

(2) Part 2: DM knowledge

The DM knowledge scales was cognitive measure of recognition and understanding about diabetes mellitus.This part consist of 10 questions about diabetic knowledge (such as importance and hazards of DM, cause of DM, DM prevention and control, etc.)

(3) Part 3: Self care activities

Skills for self care activities included 4 components: dietary control, physical exercise, medicine compliance, and complication observation. A higher score indicated greater skills for self care activities

(4) Part 4: Self- efficacy

This part contained questions of 8 items for examination self-efficacy. A five- point scale (1-5 scores) was used for ranging from “very much agree to do not agree at all”. The maximum score was 40.

(5) Part 5: Social support

This part contained questions of 10 items for examination social support. A five- point scale (1-5 scores) was used for ranging from “very much agree to do not agree at all”. The maximum score was 50.

(6) Part 6: DM management system in community of THPH

This part contained of questions of 10 items for examination DM management system of THPH. A five- point scale (1-5 scores) was used for ranging from “very much agree to do not agree at all”. The maximum score was 50.

(7) Part 7: Assessment of Tri-linked model

This part consisted of questions of 10 items for Tri-linked model. A five-point scale (1-5 scores) was used for ranging from “very much agree to do not agree at all”. The maximum score was 50, and semi-constructed in-depth interview for Tri-linked model.

3.8.4 Data Quality Control

Four experts in health promotion, nutrition, and a specialist in endocrine gland checked the validity and content’s coverage of the interview questionnaires. The researcher revised and reconstructed the questionnaires according to the experts’ advice. To improve the reliability of the data, 6 interviewers had been trained prior to the pre-data collection. Instruction for interviewing had been constructed. The interviewers were the same ones in both the intervention group and the comparison group. The interviewers tried out the interview questionnaires in 30 respondents who had similar characteristics to the samples. Inter –observer reliability was tested. The percent of agreement between the 6 interviewers was 70 %. The interview questionnaires were improved after 4 experts had commented. The interviewers should introduce himself /

herself as a consultant. The informal climates and trust was created during the interview. Listening more and leading question must be taken into consideration. Data were also triangulated across data-collection methods: observation, semi-structured interviews and survey looking for structure, and meaning and checking the validity of the data.

Data collection

Data were collected through the following steps:

1) Instructions for interviewing were constructed and 6 interviewers were trained, regarding the objectives of the research, the content of the questionnaires and data collection procedure, including ethical issues.

2) The researcher coordinated with health personnel of THPH.

3) The researcher and the research assistants collected qualitative data by in-depth interview.

3.9 Ethical Considerations

This study has been approved by the Ethics Committee for Research involving human subjects, Mahasarakham University (Approval number: 0136 / 2011).
All subjects provided written informed consent.

Individual interview results had been kept completely confidential and destroyed. The results of interview were reflected in an overall assessment, not as an individual view. Consent to participate was voluntary. The participants could stop their interview at anytime and were not required to give any reasons for the withdrawal of their consent. The respondents had the right to refuse to give an answer. The research proposal had been approved by the ethic committee for human research of the University. The comparison group had been treated by the same intervention after six months of the research.

3.10 Data Analysis

The analysis of data corresponded to the research questions and the hypotheses. Data were verified and analyzed by the statistical package in order to assure that there was no error during process of coding and data entry.

3.10.1 Phase I

3.10.1.1 Descriptive statistics: to explain socio-demographic characteristics of the subjects in the form of frequency, percent, mean, and standard deviation, median, min, and max

3.10.1.2 Analytical statistics: Multiple regression to describe the relationship of several independents to a dependent variable in order to construct a model for prediction of the relationship of independent and dependent.

3.10.2 Phase II

The process of data analysis consists of three activities; data reduction, data display, and conclusion.

3.10.2.1 Data reduction: This is the process of transcribing the interviews, and then selecting relevant sections on which the analysis can focus. After the transcription is completed, the textual data can be coded. The author wanted to identify all the key issues, concepts and themes by which the data can be examined and referenced. This starts with the questions derived from the original research aims, but also brings in emergent issues raised by informants themselves or by other kinds of data such as documents (Pope, Ziebland and Mays, 2000).

3.10.2.2 Data display: The next stage of analysis involves an organized assembly of information to permit the formulation of generalizations and conclusion drawing. This happened as preliminary accounts of events and perspectives in each case study province were also written up as draft chapter sections. As the second and third cases were also written up similar issues addressed comparisons and contrasts were explored. It was then necessary to re-visit the earlier drafts and to add missing comparative information, and think about possible explanations for differences of approach.

3.10.2.3 Conclusion drawing and verification: This is the process of drawing conclusions from the case analysis used a cross –case analysis to determine commonalities and differences across boundaries (Patton, 2002).This is what happened as the initial drafts were revised to take account of differences similarities in findings and the ideas for the different key themes. Attempts were then made to verify or test these conclusions by checking that sufficient evidence has been produced verified, and in some cases looking for corroborating information in documents or in a few instances by follow-up telephone calls to a small number of key informants to check specific points (Miles and Huberman, 1994)

3.10.3 Phase III

The design of this research was non-equivalent pre-test post-test with control group study. The statistical analyses employed in this study were as follows:

3.10.3.1 Descriptive statistics to explain socio-demographic characteristics of the subjects in the form of frequency, percent, mean, and standard deviation.

3.10.3.2 Analytical statistics:

1) The Paired samples t- test: This statistics was conducted to examine the difference of mean score of DM knowledge, self- care management, DM management system of SHPH , self-efficacy, social support, FPG, HbA1c within the intervention group and comparisons group.

2) The Independent sample t- test: This statistics was used to examine the difference of mean scores of DM knowledge, self- care management, self-efficacy, social support, DM management system of SHPH (regular system and newly), FPG, HbA1c between the intervention group and comparisons group.

3) Ancova: This statistics was used to examine the difference of mean scores of DM knowledge, self-care activities, self-efficacy, social support, DM management system of THPH (regular system and new system), FPG, HbA1c between the intervention group and comparisons group by control covariate of two group (pre-test).

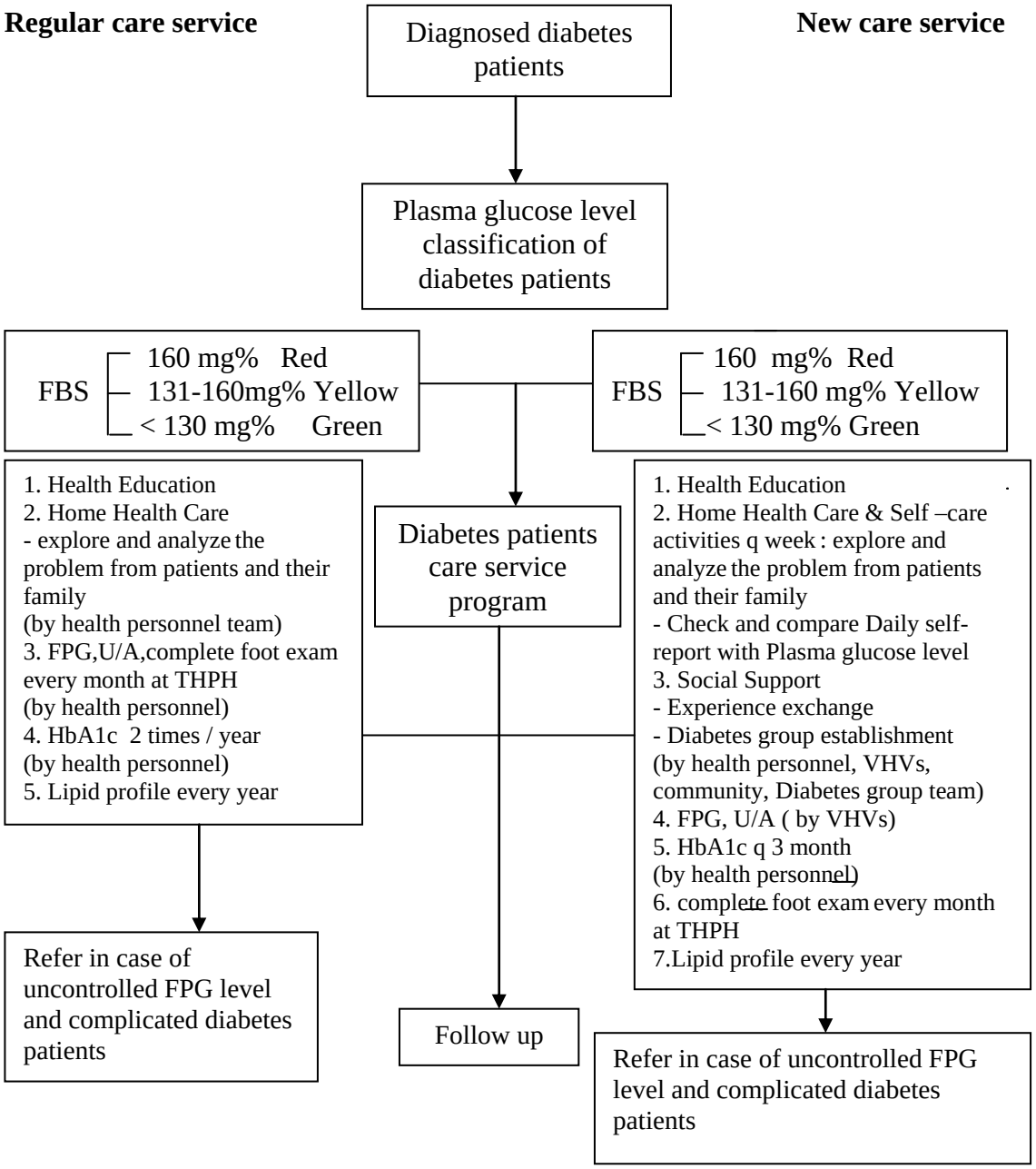


Figure 3.2 Comparison between the regular and the newly diabetes care service system

CHAPTER IV

RESULTS AND DISCUSSION

This chapter presented the results of the data analysis. The results of this research were divided 3 phases as follows:

1. Phase I : Survey
2. Phase II : In-dept interview
3. Phase III : Quasi-experiment
4. Base line data of the samples
5. Effect of the Tri-linked model (TLM) on the outcome and impact variables related to the hypotheses
6. Assessment of the satisfaction of the Tri-linked model (TLM)

4.1 Phase I : Survey

The phase I of this study aimed to determine the influence conditions of the Tambon Health Promoting Hospitals (THPHs) for policy implementation (dependent variable). There are 8 sets of independent variable : Opinion of THPH Policy, Mission & Authority, Organization, Social support, Personnel's attitude, Resources, Administrators, and Evaluation & Regulation. Phase I was performed in March 2011, using surveyed by questionnaires of 300 Tambon Health Promoting Hospital personnel from 13 districts (total = 25 districts) and the provincial, district administrators in Ubonratchathani Province.

Result of phase 1

Ubonratchathani Province is the third largest province of north –east of Thailand.There are 319 health centers. The population of its responsibility are around 3,000-20,000 population, and the health personnel average are 2.5 persons/health center.

Thus, the researcher conducted a survey and found as follows :

The Socio-demographic Characteristics of 300 THPH personnel were illustrated in table 4.1. Most of the participants were females (71.3 % and 28.7% males) more than half were aged 41 – 50 years (58 %). Nearly all of the subjects were married (65 %).The majority of them were Bachelor degree graduates (85.3 %). For position of

the number of directors, Public health Scholars and RNs were alike (20.7 %, 29.7%, 30.3 % respectively) and Length of working of less than 10 years, 11-20 years and more than 20 years were alike (33.7%, 34.7%,31.6% respectively).

Table 4.1 Socio-demographic Characteristics of THPH personnel in UBP (n=300)

Variables	Frequency	Percent
Age group		
20 – 40	174.0	58.0
41 – 50	100.0	33.3
51 – 60	26.0	8.7
Mean (SD)	37.9 (9.4)	
Median	38.0	
Min	22.0	
Max	58.0	
Gender		
Male	86.0	28.7
Female	214.0	71.3
Marital status		
Single	77.0	25.7
Married	195.0	65.0
Widow	20.0	6.7
Separated/ divorced	8.0	2.7
Educational level		
Diploma degree	31.0	10.3
Bachelor degree	256.0	85.3
Master degree	13.0	4.3
Position		
Director	62.0	20.7
Public health Scholar	89.0	29.7
RN	91.0	30.3
TN	1.0	0.3
Dental officer	18.0	6.0
Other	39.0	13.0
Length of working		
< 10 years	101.0	33.7
11- 20 years	104.0	34.7
> 20 years	95.0	31.6
Mean (SD)	6.9(7.5)	
Min	3.0	
Max	34.0	

Table 4.1 showed mean ($\bar{x}$) , Standard deviation (S.D.) of the influential conditions for THPH policy implementation by level of agreement of THPH personnel opinion found that the mean score of Policy, Evaluation & Regulation were high ($\bar{x}$ = 3.88, 3.72 respectively). The mean score of Mission & Authority, Organization, Social support, personnel's attitude, Resources, Administrators were moderate ($\bar{x}$ = 3.38, 3.42, 3.45, 3.36, 3.38, 3.37 respectively)

Table 4.2 Mean ($\bar{x}$), Standard deviation (S.D.) of the influential conditions for policy implementation by level of agreement of THPH personnel opinion

Variables	$\bar{x}$	**S.D**	**Level**
Policy	3.88	0.55	High
Mission & Authority	3.38	0.44	Moderate
Organization	3.42	0.51	Moderate
Social support	3.45	0.46	Moderate
Personnel's attitude	3.36	0.52	Moderate
Resources	3.38	0.44	Moderate
Administrators	3.37	0.44	Moderate
Evaluation & Regulation	3.72	0.55	High

The average scores of all items were also high and moderate. Regarding the opinion of the policy, Mission & Authority, Personnel's attitude, Resources and Evaluation & Regulation, it was found that majority of participants strongly agree with and agree of all sub-topics. Almost sub-topic of organization was strongly agreed and agree. There were only two sub-topic of organization were neither nor disagree; working flexibility and the THPH coordination. There were three sub-topic of social support were neither nor disagree and disagree; high-level agencies support, the knowledge, help and support system from the central. There were three sub-topic of Administrators were neither nor disagree and disagree; late policy implementation solving, responsibility for performance and gave the advice, opportunity to everyone to gave their opinion. (table4.3)

Table 4.3 Percentage of the influential conditions for policy implementation by level of agreement of THPH personnel opinion (n = 300)

Opinion of THPH's personnel	Strongly agree n (%)	Agree n (%)	Neither nor disagree n (%)	disagree n(%)	Strongly disagree n (%)
Policy					
1. The THPH policy was supported by the appropriate theory	67 (22.3)	183 (61)	40 (13.3)	10 (3.3)	0
2. The goals of THPH policy are clear	48 (16.0)	186 (62)	61 (20.3)	5 (1.7)	0
3. The objectives of THPH policy are clear and well-understood	67 (22.3)	183 (61)	40 (13.3)	10 (3.3)	0
4. The goals are congruent with Objectives of THPH policy	65 (21.7)	157 (52.3)	70 (23.3)	8 (2.7)	0
5. The Standards and Key performance indicators are clear	39 (13)	194 (64.7)	58 (19.3)	8 (2.7)	1 (0.3)
6. Means is congruent with the THPH policy	47 (15.7)	170 (56.7)	73 (24.3)	10 (3.3)	0
7. The policy is congruent with the central policy and previous policy	41 (13.7)	167 (55.7)	85 (28.3)	6 (2.0)	1 (0.3)
8. The health personnel at all level in your province understand the goal of THPH policy in the same way	37 (12.3)	193 (64.3)	62 (20.7)	8 (2.7)	0
9. There was pilot project before this policy was Performed in coverage in the province	44 (14.7)	177 (59)	72 (24.0)	7 (2.3)	0
10.The concept of THPH policy was appropriately performed in your community	47 (15.7)	151 (50.3)	89 (29.7)	12 (4.0)	1 (0.3)
Mission & Authority					
1. The priority stages of THPH policy are clear	47 (15.7)	151 (50.3)	89 (29.7)	12 (4)	1 (0.3)
2. Mission and authority is congruent with the policy objectives	38 (12.7)	144 (48.0)	94 (31.3)	24 (8.0)	0
3. The process of THPH policy implementation is clear	37 (12.3)	172 (57.3)	77 (25.7)	14 (4.7)	0
4. The project was congruent with the goals and objectives of the main policy	27 (9.0)	154 (51.3)	99 (33.0)	19 (6.3)	1 (0.3)
5. Means of THPH policy were simplified to Understood	23 (7.7)	197 (65.7)	69 (23.0)	11 (3.76)	0

Table 4.3 (continued)

Opinion of THPH's personnel	Strongly agree n (%)	Agree n (%)	Neither nor disagree n (%)	disagree n(%)	Strongly disagree n (%)
6. The rules and regulation are clear	29 (9.7)	194 (64.7)	58 (19.3)	19 (6.3)	0
7. Reward and Punishment for health personnel were determined	21 (7.0)	157 (52.3)	89 (29.7)	2 (10.7)	1 (0.3)
8. The authority allocation is clear	34 (11.3)	128 (42.7)	82 (27.3)	50 (16.7)	6 (2.0)
9. The coordination between THPH agencies has been smooth	33 (11.0)	101 (33.8)	77 (25.8)	83 (27.8)	5 (1.7)
10.The mission standard between THPH agencies were determinated	26 (8.7)	122 (40.7)	86 (28.7)	61 (20.3)	5 (1.7)
Organization					
1.The infarstructue of THPH is appropriated to the performance.	39 (13)	162 (54.0)	70 (23.3)	29 (9.7)	0
2.The administration structure of THPH was not congruent with policy.	27 (9.0)	157 (52.3)	64 (21.3)	48 (16)	4 (1.3)
3. THPH working was flexiible.	17 (5.7)	86 (28.7)	127 (42.3)	86 (28.7)	17 (5.7)
4. The coordination was smooth both inside and outside the THPH	30 (10)	99 (33.0)	67 (22.3)	78 (26.0)	26 (8.7)
5. Your THPH had been successful in the previous policy.	17 (5.7)	100 (33.3)	94 (31.3)	75 (25.0)	14 (4.7)
6. The good atmosphere in workplace make the health personnel willing to work.	31 (10.3)	157 (52.3)	52 (17.3)	54 (18.0)	6 (2.0)
7. Your THPH do not give opportunity for health personnel to express their ability.	39 (13.0)	162 (54.0)	70 (23.3)	29 (9.7)	0
8. Your THPH received benefit from THPH policy to develop the quality of service delivery system.	23 (7.7)	75 (25.0)	81 (27.0)	93 (31.0)	28 (9.3)
9. Your supervisor absolutely willing to perform THPH policy accomplishment	42 (14.0)	178 (59.3)	58 (19.3)	21 (7.0)	1(0.3)
10.THPH policy is the direct benefit for the people in the community	9 (19.7)	160 (53.3)	64 (21.3)	15 (5.0)	2 (0.7)

Table 4.3 (continued)

Opinion of THPH's personnel	Strongly agree n (%)	Agree n (%)	Neither nor disagree n (%)	disagree n(%)	Strongly disagree n (%)
Social support					
1.Public relationship by radio and Television made people understand well the roles of THPH.	40 (13.3)	122 (40.7)	83 (27.7)	45 (15)	10 (3.3)
2.You always had inconvenience when contacting with Tambon Administrative organization (TAO)	30 (10)	79 (26.3)	95 (31.7)	79 (26.3)	17 (5.7)
3.Your THPH also received sufficient budget support from TAO.	13 (4.3)	92 (30.7)	97 (32.3)	80 (26.7)	18 (6)
4.Your THPH always receive the support from the high-level agencies.	11 (3.7)	65 (21.7)	115 (38.3)	94 (31.3)	15 (5.0)
5.Your THPH received the knowledge from the central consistently.	9 (3.0)	32 (10.7)	88 (29.3)	144 (48.0)	27 (9.0)
6.There has been help and support system from the central consistently whenever THPH encountered problems.	5 (1.7)	53 (17.7)	121 (40.3)	103 (34.3)	18 (6.0)
7.Your THPH has received good collaboration from the community to perform THPH policy.	37 (12.3)	179 (59.7)	65 (21.7)	18 (6.0)	1 (0.3)
8.Your THPH was admired from the clients more than before.	34 (11.3)	164 (54.7)	76 (25.3)	25 (8.3)	1(0.3)
9.Your THPH has established the THPH administrative committee for THPH policy implementation support	47 (15.7)	216 (72.0)	30 (10.0)	7 (2.3)	0
10.Your THPH always provide the administrative committee meeting.	34 (11.3)	183 (61.0)	63 (21.0)	19 (6.3)	1 (0.3)
Personnel's attitude					
1.The health problems in the community that trend To be violent will be solved by THPH policy.	48(16.0)	147 (49.0)	85 (28.3)	19 (6.3)	1 (0.3)
2.THPH should provide proactive strategy mainly health promotion and prevention in order to curative budget decreasing.	92 (30.7)	174 (58.0)	27 (9.0)	7 (2.3)	0

Table 4.3 (continued)

Opinion of THPH's personnel	Strongly agree n (%)	Agree n (%)	Neither nor disagree n (%)	disagree n(%)	Strongly disagree n (%)
3.THPH can not provide proactive service because of work overload.	58 (19.3)	85 (28.3)	70 (23.3)	69 (23.0)	18 (6.0)
4.You worried about how to accomplish the performance of this policy	33 (11)	110 (36.7)	84 (28.0)	64 (21.3)	9 (3.0)
5.The THPH was not different from the previous policy, PCU, only the name has been change	70 (23.3)	106 (35.3)	71 (23.7)	51 (17.0)	2 (0.7)
6.THPH policy usual to have a problem at the beginning. But, in the end it was successful because of collaboration of all sectors.	38 (12.7)	183 (61.0)	64 (21.3)	12 (4.0)	3 (1.0)
7.The routine work is appropriate, The THPH policy made the health personnel work overload.	40 (13.3)	70 (23.3)	90 (30.0)	85 (28.3)	15 (5.0)
8.You have been aspired to work by the means of THPH.	25 (8.3)	155 (51.7)	80 (26.7)	33 (11.0)	7 (2.3)
9. You attempted to work load for THPH achieve its intended objectives.	46 (15.3)	182 (60.7)	52 (17.3)	19 (6.3)	1 (0.3)
10.Your working goals are congruent with THPH policy.	38 (12.7)	204 (68.0)	50 (16.7)	8 (2.7)	0
Resources					
1. The budget of THPH was sufficient.	37 (12.3)	144 (48.0)	95 (31.7)	95 (31.7)	24 (8.0)
2. The Infrastructure of THPH was appropriate.	35 (11.7)	173 (57.7)	78 (26.0)	14 (4.7)	0
3. The instruments of THPH were sufficient.	26 (8.7)	155 (51.7)	99 (33.3)	19 (6.3)	1 (0.3)
4. The budget was supported on time.	21 (7.0)	199 (66.3)	69 (23.0)	11 (3.7)	0
5. Sufficient health personnel according to THPH policy standard.	27 (9.0)	194 (64.7)	60 (20.0)	19 (6.3)	0
6. There is appropriate health personnel allocation	21 (7.0)	156 (52.0)	90 (30.0)	32 (10.7)	1 (0.3)
7.There is continuity of knowledge and skills support for health personnel.	5 (1.7)	51 (17.0)	83 (27.7)	128 (44.7)	33 (11.0)
8.There is support system from the central government consistency.	5 (1.7)	83 (27.6)	78 (26.0)	101 (33.7)	33 (11.0)

Table 4.3 (continued)

Opinion of THPH's personnel	Strongly agree n (%)	Agree n (%)	Neither nor disagree n (%)	disagree n(%)	Strongly disagree n (%)
9.Telemedicine was well-used for curative consultancy	5 (1.7)	61 (20.3)	86 (28.7)	122 (40.7)	26 (8.7)
10.The sufficient medicines were supplied to your THPH both in quantity and items according to THPH standard.	39 (13.0)	162 (54.0)	70 (23.3)	29 (9.7)	0
Administrators					
1.Your THPH personnel are proud to work with their supervisor and try to work for accomplishment	32 (10.7)	149 (49.7)	95 (31.7)	24 (8.0)	0
2. Your supervisor understood and had skills in Administration.	29 (9.7)	177 (59.0)	80 (26.7)	14 (4.7)	0
3. Your supervisor assign and empower to the health personnel regarding their abilities.	19 (6.3)	158 (52.7)	103 (34.3)	19 (6.3)	1 (0.3)
4. Your supervisor paid attention to performance support for accomplishment.	16 (5.3)	201 (67.0)	72 (24.0)	11 (3.7)	0
5. Your supervisor was fair.	24 (8.0)	194 (64.7)	63 (21.0)	19 (6.3)	0
6. Your supervisor participated in performing and close regulation.	19 (6.3)	156 (52.0)	93 (31.0)	31 (10.3)	1 (0.3)
7. Your supervisor can solve the late policy Implementation	5 (1.7)	51 (17.0)	85 (28.3)	133 (44.3)	26 (8.7)
8. Your supervisor took responsibility for performance and gave advice whenever barriers were encountered	5 (1.7)	83 (27.8)	78 (26.1)	107 (35.8)	26 (8.7)
9. Your supervisor gave an opportunity to everyone to gave their opinion.	5 (1.7)	61 (20.3)	87 (29.0)	123 (41.0)	24 (8.0)
10. Your supervisor often had wrong decission making.	39 (13.0)	162 (54.0)	70 (23.3)	29 (9.7)	0
Evaluation & Regulation					
1. You were trained for capacity building in THPH policy	50 (16.7)	189 (63.0)	29 (9.7)	30 (10.0)	2 (0.7)
2. Your THPH received the means manual to perform For the policy accomplichment	42 (14.0)	211 (70.3)	35 (11.7)	11 (3.7)	1 (0.3)
3. THPH policy had a clear standard to perform.	38 (12.7)	200 (66.7)	57 (19.0)	4 (1.3)	1 (0.3)

Table 4.3(continued)

Opinion of THPH's personnel	Strongly agree n (%)	Agree n (%)	Neither nor disagree n (%)	disagree n(%)	Strongly disagree n (%)
4. THPH had an evaluation and regulation process	34 (11.3)	184 (61.3)	68 (22.7)	14 (4.7)	0
5. The means to perform THPH policy were determined by CUP and your THPH	20 (6.7)	165 (55.2)	84 (28.1)	28 (9.4)	2 (0.7)
6. CUP always support the health personnel for the THPH	31 (10.3)	170 (56.7)	60 (20.0)	33 (11.0)	6 (2.0)
7. The Provincial health office provide help and support system according to THPH policy.	23 (7.7)	157 (52.3)	98 (32.7)	21 (7.0)	1 (0.3)
8. The Provincial health office provide the THPH meeting for experience among THPH consistently.	29 (9.7)	145 (48.3)	82 (27.3)	37 (12.3)	7 (2.3)
9. The District health office provide help and support system according to THPH policy.	29 (9.7)	180 (60.0)	74 (24.7)	17 (5.7)	0
10. The THPH policy was flexibility to perform	31 (10.3)	161 (53.7)	81 (27.0)	21 (7.0)	6 (2.0)

Table 4.3 showed the level of DM care management in the community of THPH found that majority of DM care management in the community of THPH were moderate level (72.3 %), followed by high level (15.3 %) and low level (12.4 %) respectively.

Table 4.4 Level of DM care management in the community (n = 300)

DM care management	n	Percent
High	46	15.3
Moderate	217	72.3
Low	37	12.4
Mean (SD)	34.8 (3.8)	
Median	35.0	
Min - Max	25.0- 46.0	

The average scores of all items were moderate. The most disagree and strongly disagree of DM care management in the community was the fast track for THPH referral system (71.3 % and 13.7% respectively), followed by the telemedicine for consultation (59 %, 9 % respectively) (Table 4.5)

Table 4.5 Number and percentage of DM care management in the community by level of agreement of THPH personnel opinion (n = 300)

DM care management	Strongly Agree n(%)	Neither nor Disagree Strongly n (%)	Agree n (%)	disagree n (%)	disagree n (%)
1.The principle of DM care management in the community are control , prevention and symtomatic treatment for severity and complication decreasing.if the patients get appropriate care and continuity. They will have good quality of life	4 (1.3)	24 (8.0)	57 (19)	140 (46.7)	75 (25)
2.DM patients caring for good quality of life needs collaboration of three stakeholders; patients and their family, community and health care service delivery.	29 (9.7)	73 (24.3)	107 (35.7)	80 (26.7)	11 (3.7)
3.Solving DM care in the community problems is difficult to succeed because of the complicated of patients problem due to social change.	14 (4.7)	75 (25.0)	114 (38.0)	85 (28.3)	12 (4.0)
4.Your THPH were DM patients survey and screening before classified the patients into risk group, healthy group for benefit of special group's service activities.	11 (3.7)	58 (19.3)	115 (38.3)	105 (35.0)	11 (3.7)

Table 4.5 (continued)

DM care management	Strongly Agree n(%)	Neither nor Disagree Strongly n (%)	Agree n (%)	disagree n (%)	disagree n (%)
5.Your THPH has the DM patients data in the community system both of total and individual.	6 (1.3)	30 (10.0)	97 (32.3)	148 (49.3)	19 (6.3)
6.Your THPH provides integrated DM care service (Prevention, Curative, Health promotion and Rehabilitation)	4 (1.3)	51 (17.0)	123 (41.0)	107 (35.7)	15 (5)
7.Your THPH consistently take home visit in the missed-follow-up DM patients, unconvenient to go to THPH or the complicated problem patients.	1 (0.3)	14 (4.7)	79 (26.3)	175 (58.3)	31 (10.3)
8.Your THPH and the community provide health promoting activities for DM disease decreasing	1 (0.3)	24 (8.0)	81 (27.0)	165 (55.0)	29 (9.7)
9. CUP set the fast track for THPH referral system.	0	3 (1.0)	42 (14.0)	214 (71.3)	41 (13.7)
10. Your THPH always can use the telemedicine for consultation with CUP	0	12 (4.0)	84 (28.0)	177 (59.0)	27 (9.0)

The mean of Diabetes care management in community of THPH and gender , Age group, Education level, and Length of working showed no significant differences ($p>0.05$) (table 4.6). Social support had significantly high positive correlations with Diabetes care management in the community ($B= 0.777$) ($p< 0.01$) while the THPH personnel opinion of Policy, Mission & Authority, Organization, Personnel's attitude, Resources, Administrators, Evaluation & Regulation had significantly mild positive correlations with Diabetes care management in the community ($B = 0.259, 0.321, 0.335, 0.265, 0.320, 0.301, 0.281$, $p< 0.01$, respectively).

Table 4.6 The Simple regression analysis between the influential factors of THPH and Diabetes care management in the community

Variables	Regression b	coefficient β	95% CI	p-value
Gender				
Male	Reference		-	-
Female	0.597	0.065	36.4 to 40.1	0.260
Age				
20-40	Reference		-	-
41-50				
51-60	-0.280	-0.044	38.5 to 40.9	0.450
Graduate				
Diploma	Reference		-	-
Bachelor				
Master	0.050	0.005	36.7 to 41.7	0.079
Length of working				
< 10 years	Reference		-	-
11- 20 years				
> 20 years	-0.461	-0.090	39.0 to 41.4	0.121
Policy	0.259	0.374	21.9 to 27.6	0.000
Mission & Authority	0.321	0.371	20.8 to 27.0	0.000
Organization	0.335	0.447	20.7 to 26.0	0.000
Social support	0.777	0.925	6.7 to 9.2	0.000
Personnel's attitude	0.265	0.361	23.2 to 28.5	0.000
Resources	0.320	0.047	20.8 to 27.1	0.000
Administrators	0.301	0.344	21.5 to 27.8	0.000
Evaluation & Regulation	0.281	0.407	21.6 to 27.0	0.000

Stepwise Multiple Regression Analysis indicated that Social support had significant positive regression weights after controlling for the other variables in the model. Evaluation & Regulation had a significant negative weight. Policy, Mission & Authority, Organization, Personnel's attitude, Resources, Administrators did not contribute to the multiple regression model (table 4.7)

Table 4.7 Stepwise Multiple Regression Analysis of factors associated with the success of THPHs policy implementation

Variables	Mean ± SD	b	β	95% CI	p-value
Social support	34.5 ± 4.6	0.810	0.964	0.768 to 0.852	0.000
Evaluation& Regulation	37.2 ± 5.5	-0.054	-0.078	-0.088 to-0.019	0.002

From table 4.7, the variables had significant correlation with the success of THPHs policy implementation 92.7% (R= 0.927) and can predict the success of THPHs policy implementation 86 % (R = 0.860), the most influential variable of the success of THPHs policy implementation was Social support (β = 0.964) with statistically significance (p< 0.01).The multiple regression equation can be seen as follows:

The success of THPHs policy implementation =

8.841 + 0.810 Social support – 0.054 Evaluation& Regulation

(12.740)* (38.329)* (-3.089)*

R = .927, R^2 = .860, SEE = 1.43891, F = 909.595 Sig = .000

* t- value

4.2 Phase II : In-dept interview

The phase II of this study was performed to confirm the result from survey if it is an influential factor, using in-depth interview for 13 Tambon Health Promoting Hospital personnel and the provincial, district administrators in Ubonratchathani Province.

Result of phase II

In this section, the findings are discussed in the light of the relevant literature.

4.2.1 The process of THPH policy implementation

The first question asked about the process which the local level (Ubonratchathani Province) performed for THPH policy implementation accomplishment and there was a high degree of consensus about the answer. Of the thirteen administers and health personnel at all levels in-dept interviewed, thirteen

(100%) stated that Ubonratchathani well-prepared to THPH policy implementation because the administers at all levels paid attention to perform this policy. Furthermore, this province had successful experience in previous policy, especially in primary care development policy (PCU) before. The discussions from various health personnel were as follows:

"Ubonratchathani had successful experiences in primary care development. Therefore, when this policy was advocated, it was not difficult to create the means for policy implementation. Also, the highest rank regional administrators and Chief of Provincial Public Health Office showed the concern that the capacity building of health personnel understanding in the same way is important. As a result, The Public Health Regional 13 provided the courses to train all of THPH health personnel in Regional 13 for THPH policy implementation. After the training courses, The Chief of Ubonratchathani Provincial Public health office showed the concern that the manpower was the essential factors in driving this policy. He had recruited eighty public health scholars for solving manpower shortage of THPH policy implementation.Therefore, all THPH in Ubonratchathani could fluently perform this policy."

"The policy and mission & authority were clear and could be performed in the real situation. Actually, this policy was not the new policy. Previously, there was a policy to develop primary care, PCU, that could develop rather well. So, this policy fulfilled, supported, and used the same means of previous policy to easily achieve the objectives".

4.2.2 The factors were the most influential for successful or failure of THPH policy implementation.

The second question asked about the factors which were the most influential for successful or failure of THPH policy implementation, especially, DM management in community of THPH. Twelve of thirteen respondents (92.3%) pointed out that the most important set of variables to drive this policy was social support.

"Our THPH policy implementation was successful because of the social support and collaboration of Tambon Administration organization, community leaders,CUP, and people. Everyone took an interest in having THPH and felt like an owner of it. For example, it was necessary to build the office building for THPH. But the limited budget allowed by the government was insufficient. So, the people in

community donated both money and labor to build the office building until it was completely finished. In conclusion, this building derived from the budget from the community more than half. Also, whenever the THPH have the projects to do, they can propose it to the THPH administrator committee for budget support. Finally, they always absolutely approved and supported the project until it became successful"

"First, all of the health personnel were worried when they knew their health center was selected to be the pilot project of THPH. However, after the meeting of all stakeholders in the community, everyone agreed and gave bsolute collaboration until our THPH won the annual national prize. Moreover, the budget of THPH was supported by all parties of the regular budget from the government, Tambon Administration Organization and donation from the community".

4.2.3 The outcomes or any changes after this policy was performed

The third question asked about the outcomes or any changes after this policy was performed. The three main positive changes were : the culture of THPH and the behavior of the staff change in the course of improving services; THPH service became efficient and effective; Patient satisfaction with THPH services increased. Of the thirteen administrators and implementers at all levels in-dept interviewed, ten (77%) said that when the THPH policy was performed, the culture of THPH and the attitudes of the staff changed their behavior, becoming client-centered and working as a team.

"When the workplace was clean, and sufficient modern medical instruments were available, we had to better change our working behaviors and services for the patients".

"In the case of resources support, CUP always rotates physicians and other authorities to work with THPH, such as, home visit. There was diversity of medication both in items and quantity more than before. However, the budget was rather late."

Nine of thirteen respondents (69.2%) mentioned that since the health center upgrade to be the THPH, services to the patients and community have become more efficient and effective.

Of the thirteen administrators and implementers at all level in-dept interviewed, ten (77%) stated that Patient satisfaction rose and the use of services by patients increased rapidly.

"We could observe that the patients had more satisfaction than before because of the new infrastructure with beautiful furnishing, beautiful environment, and new a good service system. Moreover, the number of services increased rapidly due to the fact that the patients could receive the same service and did not lose their time to go to the community hospital."

4.2.4 Barriers**,** suggestion and support that were necessary for THPH policy Implementation

The forth and fifth question asked about barriers**,** suggestion, and support that were necessary for THPH policy Implementation. Many of thirteen respondents gave more than one opinion.

Eleven of thirteen respondents (84.6%) stated that the strength of this policy was its flexibility and the ability to adapt according to the real situation.

"I realized that this policy was formulated from studying the data, the strengths, and the weaknesses from the old policy, and tried to prevent the problem that may have occurred when this policy was advocated. Moreover, the structure to support the resources was clearer than that in the previous policy.However, there were no means to perform in some issues; it was strengths forthe implementers who could adapt this policy according to the community situation".

Twelve of thirteen respondents (92.3%) stated that the budget was rather late.

"Although the budget was sufficient, it was rather late. If this policy improves solving this problem, it will make the implementers at all levels work more fluently."

Twelve of thirteen respondents (92.3%) stated telemedicine was rather inconvenient to perform

"The Telemedicine was employed as a fast track to communicate and consult the doctor. But, it was inconvenient for the doctors to wait for consultant because they had to take care of the emergency patients or in-patient department in the hospital. The telephone was properly use."

Eleven of thirteen respondents (84.6%) stated that the present chronic care model was difficult to conduct in the real situation.

" The Innovative Care for Chronic Conditions Framework of THPH was rather sophisticated. If it was easy to understand and perform, I think the chronic diseases in community would be fast solving."

4.2.5 The future of THPH

The sixth question asked how you think about THPH in the future.

While three health personnel said that they had no idea because they are followers, overwhelmingly, the respondents said that THPH do not absolutely follow a central level guidance and the important factors for policy accomplishment are social support and participation of all sectors in the community. Ten of thirteen health personnel (77%) stated that this was because of each society and environment had difference and there were also differences between the attitudes, behavior of staff, clients and the power in the community.

"In the case of the future of THPH, I think the THPH has to apply the central level guidance which is appropriate and suitable to be implemented in the real situation. It can not absolutely follow the central level guidance because of the differences of area.

"My opinion is THPH should apply and integrate the central level guidance to solving health problem in the community regarding local needs. Social support and participation of all sectors in the community are important to drive this policy for accomplishment."

4.3 Phase III : Quasi-experiment

The phase III of this study was conducted after derived result from phase I and phase II .The conditions which were mentioned in both phases were successful conditions that the THPH needed to accomplish the objectives.

The researcher developed the Tri-linked model (TLM) by applying the concept of self- efficacy, social support, and the successful conditions of THPH in phase I and phase II. Therefore, this phase aimed to study the effectiveness of the Tri-linked model (TLM) to improve diabetes care management of THPHs of type-2 diabetic patients to solve their problem. The results of this research were divided as follows.

4.4 Base line data of the samples

The samples were collected from diabetic clinics from two Tambon Health Promoting hospitals in Ubonratchathani province. Samples were type-2 diabetic patients (DM patient) who were diagnosed by medical doctors. There were 45 DM patients enrolled in the experimental group and 45 DM patients in the comparison group. The total sample size was 90. Data collection was done by using a questionnaire that was developed by the researcher. The Tri-linked model (TLM) had been implemented for 12 weeks period.

Data from the 90 DM patients who participated in this study (figure 4.1) were collected during the pre-implementation phase from September to December 2011

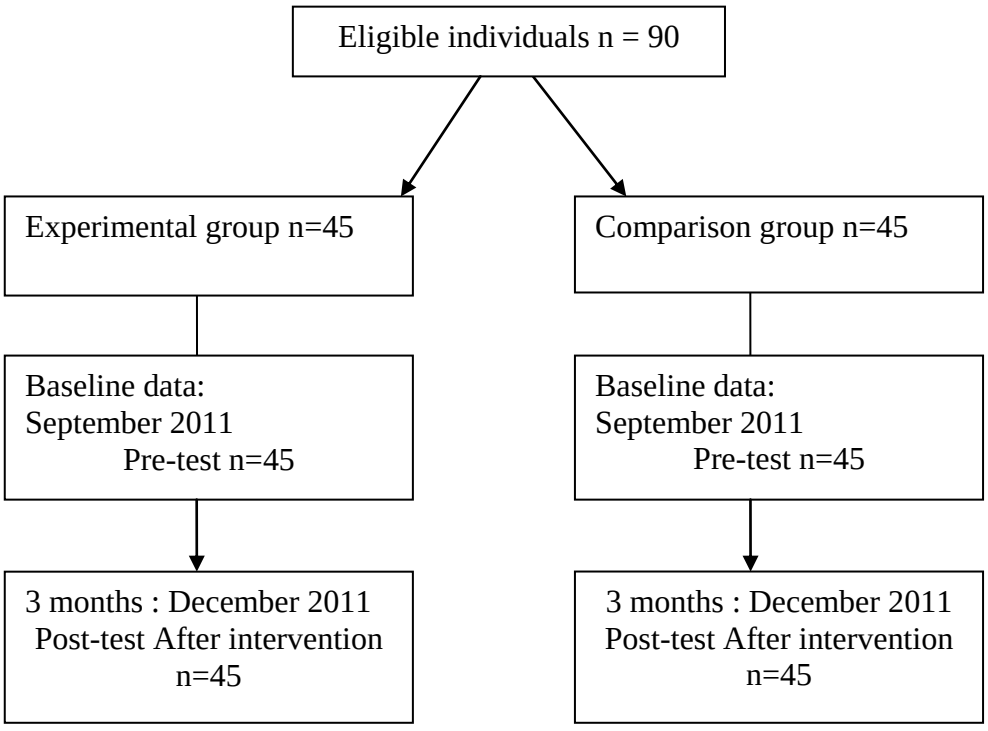


Figure 4.1 Flow diagram showing the allocation of participants enrolled in the study

At the pre-implementation phase, all patients in the experimental group, and those in the comparison group answered the questionnaires. At the end of the program (12 weeks) all of them still enrolled and completed the questionnaires and took part in

the program until it was finished. The general characteristics of the participants in both groups had been compared and were described in the following:

4.4.1 Socio-demographic characteristics

4.4.1.1 Sex

The participants of the experimental group and the comparison group were matched by sex. The majority of the individuals in the groups were females (77.8 % in the experimental group and 77.6 % in the comparison group) (Table 4.8)

4.4.1.2 Age

Since the experimental group and the comparison group were categorical matched by age, the majority of the subjects of the experimental group were between 50-59 years old (35.6%) and the comparison group were 60 years and over (35.6%). The group of those between 40-49 years old was smallest with 31.1%. The average age of DM patients for experimental group and comparison group showed no significant difference (P=0.968). The average age of experimental group and comparison group were 54.9 +7.4 yrs. and 55.4 + 7.4 yrs. Respectively, as illustrated in Table 4.8

4.4.1.3 Marital status

The majority of all participants were married; 75.6 % of the experimental group and 73.3 % of the comparison group. Among experimental group and comparison group, the number of persons who were categorized as group of the proportion of individuals either being widowed, divorced, separated or single amounted to 24.4 % for the experimental group, and 26.7% for the comparison group. No significant differences between the groups had been detected (p= 0.898), illustrated in Table 4.9

4.4.1.4 Education

No significant differences in the educational level between the experimental group, and the comparison group were found (p=0.398). The majority of the participants graduated primary school (95.6 % of the experimental group and 68.3 % of the comparison group). The proportion of the educational level higher than primary school was 4.4% for the experimental group, and 6.7% in the comparison group (Table 4.9)

4.4.1.5 Occupation

Occupation was similar for both Categories of participants**.** Almost half of all participants were farmers with 64.4%, and the lowest group was government officer (2.2%) of both groups. The merchants, employee/ laborer, and house work/ retire

of both group were similar. There was no significant difference between the experimental group and the comparison group. (p=1.0) (Table 4.9)

4.4.1.6 Family income

Family income of the participants from the experimental**,** and the comparison group were not significantly different (p=0.874). The largest group of the study subjects had income between 3,000-6,000 baht/month (80% of the experimental group and 73.3 % of the comparison group). Those with an income of more than 6,000 baht/month was the smallest group (6.7 % of the experimental group and 8.9 % of the comparison group) (Table 4.9)

4.4.1.7 Duration of DM

Duration of DM was similar for both Categories of participants (p=0.944). The majority of the experimental group and the comparison group had DM between 6-10 years (46.7 %, and 51.1 %, respectively).

4.4.1.8 Fasting plasma Glucose (FPG**)**

Most of the participants from the experimental group and the comparison group had fasting plasma Glucose (FPG) levels higher than 130 mg/dl. No significant differences between groups were found (p=1.0).

4.4.1.9 HemoglobinA1c (HbA1c)

Most of the participants from the experimental group and the comparison group had HemoglobinA1c (HbA1c) levels higher than 7. The experimental group had HemoglobinA1c (HbA1c) at levels 14-16 higher than the comparison group (91.2 % of the experimental group and 82.2 % of the comparison group). There were significant differences between two groups (p = 0.003).

Table 4.8 Baseline and demographic characteristics of type-2 diabetic patients.

Variables	Overall No. (%)	Experimental group No. (%)	Comparison group No. (%)
Gender			
Female	69 (76.7)	35 (77.8)	34 (75.6)
Male	21 (23.3)	10 (22.2)	11 (24.4)
Age (yrs)			
40-49	28 (31.2)	14 (31.1)	14 (31.1)
50-59	31 (34.4)	16 (35.6)	15 (33.3)
≥60	31 (34.4)	15 (33.3)	16 (35.6)
Mean(SD)	55.1(7.4)	54.9 (7.4)	55.4 (7.4)
Median	55.0	55.0	55.0
Min-Max	41-65	41-65	45-65
Marital status			
Married	67 (74.4)	34 (75.6)	33 (73.3)
Single	5 (5.6)	2 (4.4)	3 (6.7)
Widowed, Divorced,Separated	18 (20)	9 (20)	9 (20)
Education			
Primary school	84 (93.3)	43 (95.6)	41 (68.3)
Secondary school	6 (6.7)	2 (4.4)	4 (6.7)
Occupation			
Farmer	58 (64.4)	29 (64.4)	29 (64.4)
Merchant	4 (4.4)	2 (4.4)	2 (4.4)
Government officer	2 (2.2)	1 (2.2)	1 (2.2)
Employee/Laborer	8 (8.9)	4 (8.9)	4 (8.9)
House work/ Retired	18 (20.0)	9 (20.0)	9 (20.0)
Family income/month(baht)			
< 3,000	14 (15.6)	6 (13.3)	8 (17.8)
3,000- 6,000	69 (76.7)	36 (80.0)	33 (73.3)
> 6,000	7 (7.7)	3 (6.7)	4 (8.9)
Mean (SD)	4,088.9 (2,175.7)	4,066.6 (2,093.3)	4,111.1 (2,278.6)
Median(QD)	3,500 (2,175)	4,000 (2,093)	3,000 (2,278)
Min-Max	1,000-12,000	1,000-11,000	1,000-12,000
Family member (persons)			
< 3	18 (20)	8 (24.4)	10 (22.2)
3-5	52 (57.8)	27 (53.4)	25 (55.6)
>5	20 (22.2)	10 (22.2)	10 (22.2)
Mean(SD)	4 (1.6)	4 (1.6)	4 (1.6)
Median	4	4	4
Min-Max	2-8	2-8	2-8
Duration of DM (yrs.)			
< 5	38.0 (42.2)	20.0 (44.4)	18.0 (40.0)
6-10	48.0 (48.9)	21.0 (46.7)	23.0 (51.1)
>10	8.0 (8.9)	4.0 (8.9)	4.0 (8.9)
Mean(SD)	5.6 (3.5)	5.4 (3.5)	5.7 (3.4)
Median	5.0	5.0	5.0
Min-Max	1-12	1-12	1-20

Table 4.9 Socio- demographic factors of the experimental and the comparison group**.**

Variables	Experimental group No. (%)	Comparison group No. (%)	p- value
Gender			
Female	35(77.8)	34(75.6)	0.803
Male	10(22.2)	11(24.4)	
Age (yrs)			
40-49	14 (31.1)	14 (31.1)	0.968
50-59	16 (35.6)	15 (33.3)	
≥60	15 (33.3)	16 (35.6)	
Mean(SD)	54.9 (7.4)	55.4 (7.4)	
Median	55.0	55.0	
Min-Max	41-65	45-65	
Marital status			
Married	34 ()75.6	33 (73.3)	0.898
Single	2 (4.4)	3 (6.7)	
Widowed, Divorced,Separated	9 (20.0)	9 (20.0)	
Education			
Primary school	43 (95.6)	41 (68.3)	0.398
Secondary school	2 (4.4)	4 (6.7)	
Occupation			
Farmer	29 (64.4)	29 (64.4)	1.000
Merchant	2 (4.4)	2 (4.4)	
Government officer	1 (2.2)	1 (2.2)	
Employee/Laborer	4 (8.9)	4 (8.9)	
House work/ Retired	9 (20.0)	9 (20.0)	
Family income/month(baht)			
< 3,000	6 (13.3)	8 (17.8)	0.874
3,000- 6,000	36 (80)	33 (73.3)	
> 6,000	3 (6.7)	4 (8.9)	
Mean (SD)	4,066 (2,093.3)	4,111 (2,278.6)	
Median(QD)	4,000	3,000	
Min-Max	1,000-10,000	1,000-12,000	
Family member (persons)			
< 3	8 (17.8)	10 (22.2)	0.697
3-5	27 (60.0)	25 (55.6)	
>5	10 (22.2)	10 (22.2)	
Mean(SD)	4 (1)	4 (1)	
Median	4	4	
Min-Max	2-8	2-7	
Duration of DM (yrs.)			
< 5	20 (44.4)	18 (40)	0.944
6-10	21 (46.7)	23 (51.1)	
>10	4 (8.9)	4 (8.9)	
Mean(SD)	5.4 (3.5)	5.7 (3.4)	
Median	5.0	5.0	
Min-Max	1-12	1-2	

* Sig at p<0.05

Table 4.10 Comparison baseline of mean score of DM knowledge, Self-care activities, Self-efficacy, Social support, DM management system, FPG, HbA1c between experimental group and comparison group (pre-test)

Variables	Experimental gr.(n=45) Mean ± S.D	Comparisons gr.(n=45) Mean ± S.D	Difference 95% CI	between group p-value
DM knowledge	37.8 ± 2.2	36.1± 1.6	0.9 - 2.6	0.03
Self-care activities	4. 5 ± 6.4	73.6 ± 5.5	-1.6 – 3.4	0.43
Self-efficacy	25.5 ± 2.0	24.7 ± 2.3	-0.1 – 1.6	0.26
Social support	35.1 ± 2.4	33.8 ± 1.4	0.4 – 2.0	0.002
DM management System	21.4 ± 2.0	21.9 ± 2.0	-1.3 -0.3	0.46
FPG	184.4 ± 7.1	183.9 ± 7.2	-2.5 – 3.5	0.73
HbA1 c	13.5 ± 1.7	13.4 ± 1.7	-0.6 – 0.8	0.90

4.5 Effect of the Tri-linked model (TLM) on the outcome and impact variables related to the hypotheses

4.5.1 Effect of the Tri-linked model (TLM)

The variables that related to the Tri-linked model (TLM) were DM knowledge, self-efficacy, self-care activities, social support, DM management system, Fasting Plasma Glucose (FPG), Hemoglobin A1c (HbA1c), and DM complications.

1. The variables were examined by testing for distribution of the data. Overall tests of assumption of the results indicated that the data could be analyzed by paired t-test , and independent t-test . Differences in the intervention effects within groups were tested by paired t-test, and between groups were tested by independent t-test. The results indicated that there was a main effect of the intervention (the Tri-linked model) at the end of the intervention program because the mean scores of DM knowledge, self-care activities, self-efficacy, social support, and DM management system increased significantly over the pre-test scores of the experimental group while the mean FPG, and HbA1c of the experimental group decreased significantly compared to the pre-test. Comparative analysis of mean scores between the experimental group and comparison group tested by independent t-test all seven parts. Mean scores of the experimental group differed from the comparison group ($p<0.01$) except at the beginning of the study. On all topics of each pre-test, there was no difference in the

mean scores between the two groups. (p<0.001). Ancova was also employed to determine whether these comparisons differed after the pre-test scores were controlled. (Table 4.11)

Table 4.11 Comparison mean score of DM knowledge, Self-care activities, Self-efficacy, Social support, DM management system, FPG, HbA1c between experimental group and comparison group (pre-test and post-test)

Variables	Analytical type	Experimentals (n=45) Mean ± S.D	Comparisons(n=45) Mean ± S.D	Mean Difference between group 95% CI p-value
DM knowledge	Baseline	37.8 ± 2.2	36.1 ± 1.6	1.8 (0.9 to 2.6) p-value = 0.03
	Post-test	45.9± 3	35.9 ± 1.6	10.0 (8.8 to 11.1) p-value = 0.000
	Mean Difference within group95% CI, p-value	8.0 (6.8 to 9.2) p-value = 0.000*	-0.2 (-0.4) to 0.7 p- value = 0.585	-
	Post-test adjusted to baseline (ANCOVA)			9.8 (8.7 to 10.9) p- value = 0.000
Self-care activities	Baseline	74.5 ± 6.4	73.6 ± 5.5	0.9 (-1.6 to 3.4) p- value = 0.43
	Post-test	93.2± 2.3	72.6 ± 4.5	20.6 (19.1 to 22.1) p – value = 0.000
	Difference within Group 95% CI, p-value	18.8 (16.7 to 20.8) p – value = 0.000*	-1.0(-0.8) to 2.7 p – value =0.26	-
	Post-test adjusted to baseline (ANCOVA)			9.5 (8.6 to 10.4) p – value = 0.000
Self-efficacy	Baseline	25.5 ± 2.0	24.7 ± 2.3	0.8 (-0.1 to 1.7) p – value = 0.3
	Post-test	32.1± 1.7	24.6 ± 2.4	7.5 (6.6 to 8.3) p – value = 0.000
	Difference within Group, 95% CI, p-value	6.6 (5.9 to 7.3) p - value = 0.000*	-0.1 (-0.6) to 0.9 p - value = 0.769	-
	to baseline (ANCOVA) Post-test adjusted			6.4 (5.6 to 7.2) p – value = 0.000

Table 4.11 (continued)

Variables	Analytical type	Experimentals (n=45) Mean ± S.D	Comparisons (n=45) Mean ± S.D	Mean Difference between group 95% CI p-value
Social support	Baseline	35.1 ± 2.4	33.8 ± 1.4	1.3 (0.5 to 2.1) p -value = 0.002
	Post-test	47.8 ± 1.5	32.6± 1.9	15.2 (14.5 to 15.9) p - value = 0.000*
	Difference within Group 95% CI, p-value	12.6 (3.4 to 11.8) p-value = 0.000*	-1.3 (0.7 to 1.9) p-value = 0.000*	-
	Post-test adjusted to baseline (ANCOVA)			13.2 (11.9 to 14.6) p - value = 0.000*
DM management System	Baseline	21.4 ± 2.0	21.9 ± 2.0	-0.5 (-1.3 to 0.3) p - value = 0.46
	Post-test	45.2 ± 4.5	25.0 ± 7.	20.1 (17.6 to 22.7) p - value = 0.000*
	Difference within Group95% CI, p-value	24.0 (2.3 to 25.7) p-value = 0.000*	1.2 (-1.4) to (-0.9) p-value = 0.000*	-
	Post-test adjusted to baseline (ANCOVA)			17.8 (16.5 to 19.1) p - value = 0.000*
FPG	Baseline	184.4 ± 7.1	183.9 ± 7.3	0.5 (-2.5 to -3.5) p-value = 0.005
	Post-test	128.7 ± 9.9	185.2 ± 6.6	56.5 (-60.0 to -52.9) p-value = 0.005
	Difference within Group95% CI, p-value	-55.7(-52.3) to (-59.0) p-value = 0.000*		1.4 (-2.7) to 0 p-value = 0.052
	Post-test adjusted to baseline (ANCOVA)			42.8 (-51.5 to -34.1) p - value = 0.000*
HbA1c	Baseline	13.6± 1.7	13.4 ± 1	0.2 (-0.6 to 0.9) p-value = 0.908
	Post-test	7.4 ± 1.4	13.7± 1.9	-6.3 (-7.0 to -5.6) p-value = 0.000
	Difference within Group 95% CI, p-value	-6.2 (- 5.8) to (-6.6) p-value = 0.000*	0.3 (- 0.8) to 0.1 p-value = 0.164	-
	Post-test adjusted to baseline (ANCOVA)			-5.2 (-6.2 to -4.3) p-value = 0.000

The data indicated that mean score of FPG of the experimental group during the intervention decreased respectively. (figure 4.2)

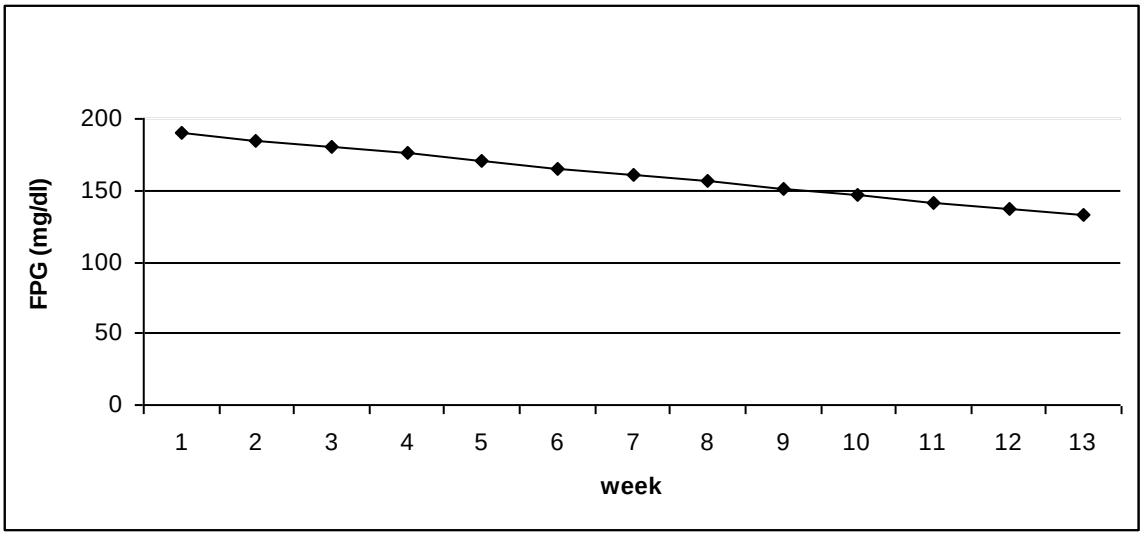


Figure 4.2 Change of mean scores of FPG level of the experimental group between intervention

DM complication decreasing

four of the five subjects in the experimental group (80 %) stated that after they took part in TLM program, they had no DM complication symptoms as before.

" I have had DM for seven years, my blood glucose level was fluctuate. I usually have many DM complication symptoms such as foot ulcer, nightmares, peripheral numbness, etc. After I took part in TLM program, I hardly meet DM complication symptoms".

Of the three THPH health personnel, three (100 %) stated that the DM complications in the experimental group decreased.

"Normally, the DM patients usually complained about their DM complications and asked for medications, after TLM was performed, 80% of the DM patients in experimental group did not complain and ask for medications as before, while the comparison group still did.

Two of the three DM patient families (66.7%) stated that after they took part in TLM program, they had more understanding about DM and could take care of DM patients according to the advisory of health personnel. As a result, the DM patients had no complications as before.

4.5.2 Hypotheses Testing

The following findings of the study are reflected on the basis of the research questions and the research hypotheses.

(1) Hypothesis 1 ： After the program, the participants in the experimental group had improved self-care behavior (diet controlling, exercise, medication compliance, and consistency complication observation) and there were reductions in the levels of fasting plasma glucose (FPG), HbA1c level and DM complication than before the program. The results showed that the scores increased significantly at post-test over the pre-test($p< 0.001$) for experimental group, but not for the comparisons. Moreover, there was a significant difference when compared to the comparisons, so the first hypothesis can be accepted.

(2) Hypothesis 2 ： After the program, the participants of the experimental group had improved self-care behavior (diet controlling, exercise, medication compliance, consistency complication observation) and there were reduction in the levels of fasting plasma glucose (FPG), HbA1c level and DM complication than the comparisons The results showed that the scores increased significantly over the pre-test ($p< 0.001$) for the experimental group, but not for the comparisons. Moreover there was a significant difference compare to the comparisons, so the second hypothesis can be accepted.

4.6 Assessment of the satisfaction of the Tri-linked model (TLM)

The satisfaction of the Tri-linked model (TLM) was measured at the 12^{th} week of the program.

4.6.1 DM's patients of experimental group

The satisfaction scores were grouped into 3 levels ： low (scores< 60%), moderate (scores< 60-79%), and high (scores ≥ 80%). At the 12 wk, it was found that the satisfaction of the majority of the members of the experimental groups was moderate and high (100%) (Table 4.12)

Average satisfaction scores

The average satisfaction scores of the experimental group were 27.2 ± 2.6 100% Which were of a moderate and high level. (Table 4.12)

Table 4.12 The satisfaction of the Tri-linked Model Program

Levels of the satisfactions	**No.**	**%**
High	33	73.3
Moderate	12	26.7
Low	-	-
Mean (SD**)**	27.2 (2.6)	
Median	28.0	
Min - Max	23 - 33	

The average scores of all items were also high and moderate. Regarding Individualized feedback, it was found that majority of participants was at a high level (53.3 %) and moderate was 42.2%. DM knowledge class was at a high level (62.2 %), moderate level was 35.6%. Daily self-report, Home visit, Individual counseling, Laboratory examination were also at a high level (68.9%,77.8%,75.6% and 91.1% respectively) and moderate level were 31.3 %, 22.2 %, 24.4 % and 8.9 % respectively. The average scores of Monthly exchange experiences class was only high level (100%) (Table 4.13)

Table 4.13 The satisfaction of the Tri-linked Model Program by activities (n = 45)

Levels of the satisfactions	High No. (%)	Moderate No. (%)	Low No. (%)
1.Individualized feedback	24 (53.3)	19 (42.2)	2 (4.4)
2.DM knowledge class	27 (62.2)	16 (35.6)	1 (2.2)
3.Daily self-report	31 (68.9)	14 (31.3)	-
4.Individual counseling	34 (75.6)	11 (24.4)	-
5.Home visit	35 (77.8)	10 (22.2)	-
6.Monthly exchange experiences class	45 (100)	-	-
7.Laboratory examination	41 (91.1)	4 (8.9)	-

4.6.2 The THPH's personnel, Village health volunteers, DM patient's families or caregivers

The satisfaction of the Tri-linked model (TLM) was measured after the 12th week of the program by in-dept interview for 10 respondents of The THPH's personnel, Village health volunteers, DM patient's families or caregivers who participated in TLM program. The three main aspects of TLM were : the behavior of the staff change in the course of improving services; TLM program was efficient and effective; Patient satisfaction with THPH services increased.

Of the ten administrators and implementers at all levels in-dept interviewed, eight (80%) said that when the TLM program was performed, the behavior of the staff changed their attitudes, becoming client-centered and working as a team.

"The TLM activities were clear and could perform in the real situation. Actually, the THPH personnel try to work hard to control patients' blood glucose level and decrease DM complications in the community according to MoPH guideline. But, this has not worked out. When we used TLM, we found that, TLM activities could support each activity to help us manage DM in community easily"

"I realized TLM could integrate with the THPH routine work and provide health team to fluently work because each segment knew their roles and tried to perform as much as they could, the more success the more they work".

Of the ten administrators and implementers at all levels in-dept interviewed, nine (90%) said that TLM can encourage DM patients to have good self-care and control their blood glucose level in order to decrease DM complications. TLM program was simplified in order to be conducted in the community because it was congruent with the environment and the local needs.

The collaboration of all families and Village health volunteers was also important for DM care management achievement. DM patient families were more confident to care and support the patients after they took part in TLM program; as one of the family member said:

"Previously, we were worried when we knew our mother had DM. we did not know how to take care of her. Our family were more worried when her blood glucose level fluctuated until we took part in TLM program; we had a chance to study about DM with my mother together with all TLM activities. These helped us to understand

well and have more confidencet to take care of my mother. Especially, Daily self-report which was compared with Fasting plasma glucose level activities provided us with appropriate diet plan for my mother."

Moreover, the Village health volunteers were proud to take part in this program and they were willing to work because they were more confident in their capacity.

"I was trained to help several works for the health personnel. So, I was proud and more confident to take care of and provide the activities for DM patients in my community in this program. This was not difficult to perform because I absolutely know about them ".

" I have had DM for five years, so I worry because I can not control my blood glucose level. I try to take care of myself according to advisory of health personnel. But, it is not effective. After I took part in TLM program, I was so happy because I could decrease my FPG in the standard range. All activities provided me with understanding about DM and easy to self-care. Especially, Daily self-report and Experience sharing group gave me more benefit to concern and control my FPG."

In summary, all of the hypotheses stated at the onset of the project could be accepted and the average scores of the satisfaction of the Tri-linked Model Program were also high and moderate, and there was a high degree of consensus about this opinion. That means the Tri-linked model by applying the self-efficacy and social support results in behavior modification by improving DM knowledge, self-care activities, self-efficacy, social support, FPG, HbA1c, and DM complication concentrations decreasing.

CHAPTER V

CONCLUSION

This chapter presents a summary of the study (including the purpose of the study, methodology, data analysis, procedures, and findings), and interpretation, as well as discussion.

5.1 Summary of the Study

This research aims to study the conditions of the Tambon Health Promotion Hospital (THPH) that influenced diabetes care management in the community in order to develop those factors to achieve the THPHs' intended objectives. The researcher contained a field practice. The intervention, Tri-linked model (TLM), was proposed and developed after analyzing the quantitative data, qualitative data and information that had been gathered by subject in-dept interviewing, and applying the influential conditions of THPH policy implementation; the concepts of social support, and self-efficacy .To evaluate the effects of the intervention, this research was designed as a quasi- experimental (non –equivalent pretest post test control-group) study design. The researcher chose one of missions of THPH, diabetes mellitus management in community to be case study to examine if THPH has the influential conditions of THPH policy implementation whether this policy has achieved its intended objectives or not. Two Tambon Health Promoting Hospitals (THPHs) from same district in Ubonratchathani Province were purposively selected in order to solve DM management system in community problems.

Data collection was conducted in three phases; the first phase: a cross-sectional survey by questionnaires among 300 THPHs personnel from 13 districts in Ubonratchathani Province prior to determining the influential conditions of the Tambon Health Promoting Hospitals (THPHs) for policy implementation (dependent variables).There were 8 sets of independent variables: Policy, Mission & Authority, Attitude of implementers, Social support, Organization, Resources, Administrators, and Evaluation & Regulation. Statistical analyses were performed using statistical software. Demographic and sickness data were presented as frequency, percentage, arithmetic means, standard deviation and statistical

significance were calculated using stepwise multiple regression to describe the relationship between Policy, Mission & Authority, Attitude of implementers, Social support, Organization, Resources, Administrators, Evaluation & Regulation and DM management in community in order to construct model for prediction the relationship of independent and dependent. In this phase the significance was accepted at p-value < 0.05

It was found that all sets of variables influenced the success of THPH policy implementation (DM management in community). But, the most important set of variables to drive this policy was social support. The findings of phase II were similar to phase I. Phase II consisted of In-depth interview of 13 Tambon Health Promoting Hospital health personnel of the provincial and district administrators in Ubonratchathani Province; most of the subjects recognized that most important set of variables for policy implementation was social support.

According to the results of two phases, data collection in phase III was

performed at two Tambon health promoting hospitals (THPHs) from the same district in Ubonratchathani Province (Nonkasem THPH and Ratsamrarn THPH).The participants recruitment used the inclusion criteria (DM duration less than 12 years, treated by oral medicines only, with FPG higher than 130 mg/dl, aged 30-65 years and being able to read and write Thai or had at least an offspring that was able to read the hand book for them, non- pregnant, fully ambulatory, able to hear, see, and speak, free of DM complications and other complications that might disturb the participation in project activities and able to participate in the program, and lived in study area (Tambon Nonkasem, Tambon Ratsamran)

Ninety type 2 diabetic patients participated in this study. There were 45 DM patients enrolled in the intervention group and 45 DM patients in the comparison group. The participants in the intervention group participated in Tri-linked model (TLM) activities. Those activities were individualized feedback, DM knowledge class, weekly home visit, individual counseling, daily self- report, weekly fasting plasma glucose examination, HbA1c examination, and monthly exchange experiences class. The questionnaires assessed DM knowledge, self care activities, self- efficacy, social support, DM management system of THPH, the result of FPG and HbA1c were performed at pre-test, and the 12^{th} week. DM complication and the assessment of the satisfaction of the Tri-linked model (TLM) was examined at the end of the program all

of experimental group, DM patient's families, THPH personnel, Village health volunteers. Data analysis was conducted by using statistical software with the analysis of percentage, arithmetic means, standard deviation, paired samples t-test, Independent samples t-test, Ancova. In this phase the significance was accepted at p-value < 0.05.The assessment of the satisfaction of the Tri-linked model (TLM) for THPH personnel, DM patient's families and Village health volunteers was performed by qualitative method (data reduction, data display and conclusion)The conclusion of the findings and recommendations were presented as follows:

5.2 Conclusion of the Study

5.2.1 Phase I

A cross-sectional survey results showed that most of the participants were females (71.3% and 28.7% males) of which one-third were aged 41–50 years (33.3%). Nearly all of the subjects were married (65 %).The majority of them were Bachelor degree graduates (85.3%). The number of participants, according to their positions, directors, Public health Scholars and RNs were alike (20.7%, 29.7%, 30.3% respectively), the number of participants, according to their length of working, less than 10 years, 11-20 years and more than 20 years were alike. It was found that the mean scores of opinion of Policy, Evaluation & Regulation were high (X= 3.88, 3.72 respectively). The mean scores of opinion of Mission & Authority, Organization, Social support, Personnel's attitude, Resources, Administrators were moderate (X = 3.38, 3.42, 3.45, 3.36,3.38,3.37 respectively).The result by multiple regression illustrated that Social support is high positive correlation with THPH policy implementation (DM management in community) (b = 0.810, p< 0.01)

5.2.2 Phase II

From the In-depth interview of 13 Tambon Health Promoting Hospital personnel of the provincial, district administrators in Ubonratchathani Province, it was found that most of the subjects agreed with all sets of variables influenced on the success of THPH policy implementation. Nonetheless, the most important set of variables to drive this policy was Social support.

100% agree that Ubonratchathani well-prepared to THPH policy implementation and use the same process of primary care development policy (PCU).

92.3% pointed out that the most important set of variables to drive this policy was social support.

77% realized that the staff were positively changed in their working behavior, and patient satisfaction rose, and the use of services by patients increased rapidly after this policy was performed.

69.2% mentioned that the services to the patients and community have become more efficient and effective.

84.6% stated that the present chronic care model was difficult to conduct in the real situation.

92.3% stated that the budget was rather late and that telemedicine was rather inconvenient to perform

84.6% stated that the strength of this policy was its flexibility to adapt according to the real situations.

5.2.3 Phase III

5.2.3.1 Socio-demographic characteristics

It was found that the majority of the participants were females, aged ≥ 55years. They had graduated primary school, were farmers, and had been sick with diabetes for 6-10 years.

5.2.3.2. Comparison of DM knowledge, self care activities, self-efficacy, social support, DM management system of THPH, FPG, and HbA1c before and after intervention showed improvement of DM knowledge, self care activities, self-efficacy, social support, DM management system of THPH, FPG, and HbA1c in the intervention group when compared with the comparisons. The mean scores of DM knowledge, self care activities, self-efficacy, social support, DM management system of THPH in the intervention group were higher than for the comparison group at the 12^{th} week and the differences were statistically significant. In addition, mean FPG levels of the intervention group were significantly lower than for the control group at the 12^{th} week. ($p<0.01$).

5.2.3.3. From the In-depth interview of 10 respondents (DM patient , DM patient's families, THPH personnel, Village health volunteers) for of the Tri-linked model (TLM), it was found that most of the subjects agreed that this program is appropriate for encourage the DM patients not only concern and well self- care, but also decrease diabetes complication

5.2.3.4. From the In-depth interview of 10 respondents (DM patient , DM patient's families, THPH personnel, Village health volunteers) for assessment of the satisfaction of the Tri-linked model (TLM), it was found that most of the subjects agreed that this program is appropriate for encourage the DM patients not only concern and well self- care, but also decrease diabetes complication.

5.3 Discussion

5.3.1 Phase I and Phase II

The successful conditions of the Tambon Health Promotion Hospital (THPH)

In the case of Tambon Health Promoting Hospital (THPH) in Ubonratchathani Province, the highest effect factor of policy implementation is social support. It was found that social support had high positive correlation with THPH policy implementation ($p< 0.01$), coefficient 0.810. It is consistent with the principle of Tambon Health Promoting Hospital (THPH), which stated that the THPHs belong to everyone in the community and everyone should participate in the development of THPHs to be the quality first line health service and solve health problems in community (MOPH, 2009). Similarly, the National Health Act gives comprehensive definition of "Health" and establishment of additional rights and duties in relation to Health, and one of five keys things stated that **"**An individual or a group of people has the right to request for an assessment and participating in the assessment of health impact resulting from a public policy." (Section 11,Thailand National Health Act, 2007).This is congruent with previous studies, Mazmanian and Sabatier, which concluded that participation of all stakeholders is useful for regulation and evaluation for personnel and policy implementation state agencies (Sabatier and Mazmznian, 1980). Kla Tongkaw studied factors affecting the success of public policy implementation: A case study of the National literacy campaign found that social support variables set was the most influential factor on the success of policy implementation both direct and in-direct because it was important for decision making process of government officers for policy implementation. Normally, in a democratic system, policy control should be exercised by actors whose power derives from their accountability to sovereign voters through their elected representatives. Moreover, Encouragement or protesting of the people directly affected to personnel's

intention for policy implementation. On the other hand, if the policy obtain help and support from the people in community, such as fund donation, labor, it will make personnel have good attitude and intend to performed policy implementation until achieve its intended objectives. (Kla Tongkaw, 1991). In contrast, Soonthornnonta (2009) found the Evaluation & Regulation factor was the factor having most influences in policy implementation process in case of the Skill Development Promotion Policy for labor in Thailand. This may be due to the fact that the policy in the study of Soonthornnonta was the initiated policy that was never performed before. Moreover, there are various parties both of government agency and non-government agency. As a result, this policy was close to Evaluation & Regulation.

The finding of phase I confirmed by the in-dept interview in phase II that indicated the reasons that social support was the efficient factor, and highest effect to drive THPH policy implementation. This evidence corresponded well to statements of several of the participants whoconcluded "Actually, THPH policy is not the new policy because there was Primary Care Unit (PCU) policy to develop health centers to be the front-line of quality health care service delivery, Ubonratchathani Province used the same processes as PCU to prepare for this policy. Therefore, THPHs in this province were systemic closely helped and supported, and also supervised". Moreover, there were various supports both of labors and fund from the people in community to improve the health center or PCU to be the THPH. "Every sector in the community was excited to have THPH. So, they absolutely gave their collaboration whenever the THPH asked for help. As a result, the health personnel could develop their works".

In summary, almost of variable sets such as opinion of Policy, Mission & Authority, Organization, Personnel's attitude, Resources, Administrators were well-prepared by Ubonratchathani provincial administration system all area. As a result, there were less difference in these variable sets of THPHs in Ubonratchathani provincial. But, Social support was the only variable sets that the THPHs had to self-prepared without the central level conduction. Therefore, the Social support had correlation with the success of THPHs policy implementation 92.7% (R= 0.927) and could predict the success of THPHs policy implementation 86 % (R = 0.860): the most influential variable of the success of THPHs policy implementation was Social support ($\beta = 0.964$) with statistically significance ($p< 0.01$). For the formulation of

THPHs policy, it was top-down implementation. But, in practice, it was found that this policy paid attention in street level bureaucrats or Bottom - up implementation. Especially, health personnel capacity building, well-prepared all process of policy, and participation of stakeholders such as central level, local level, and people in community. Therefore, this policy should be a combination of two perspectives of implementation.

5.3.2 Phase III

Approximately three quarters of the participants in this study (76.7%) were females. This is consistent with previous studies which also show a high ratio of females with type-2 diabetes to males (Wild et al., 2004: 1047-1053 ; Akinchi et al., 2008: 117-123). Females were reported as being more interested in their health than males (Chaveepojnkamjorn et al., 2008: 328-334). Type-2 diabetic patients are more prevalent in older age groups. Therefore, the mean age of subjects chosen for this study was the late middle age (mean= 55.1, SD=7.4).

5.3.2.1 Effect of the Tri-linked model

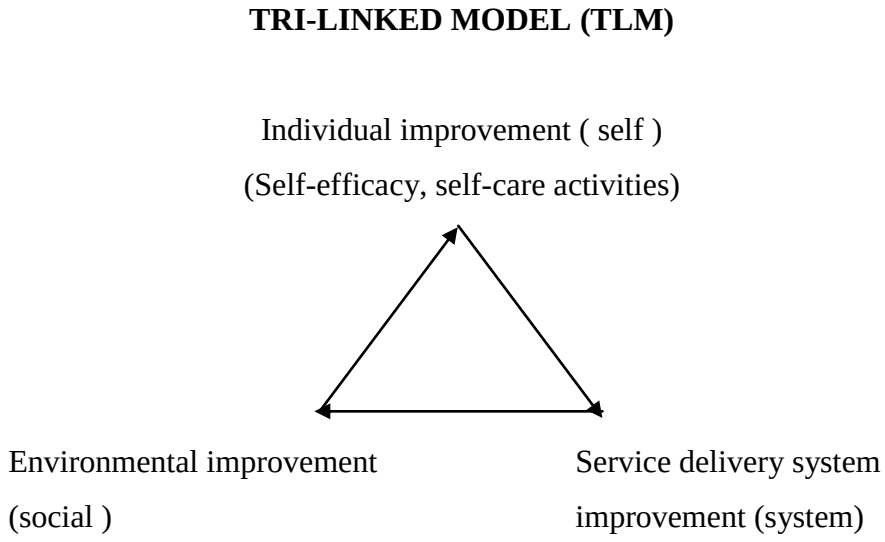


Figure 5.1 The Tri-linked Model

The results of this research showed that the new DM management system in community or the Tri-linked model (TLM) affected on DM complication decreasing of DM patients. The aim of activities was FPG level controlling problem solving to decrease DM complications**.** The program started with **Individual improvement** (Self-efficacy,

self- care activities: self) in which activities consisted of Individualized feedback, DM knowledge and skill for self-care activities class to capacity building Self-efficacy, self-care activities among the experimental group. **Environmental improvement** (social support:social) was applied by individual counseling for patients, caregivers and provided activities for DM in the community. **Service delivery system improvement** (DM management system of THPH:system) was used to encourage the patients in self-care activities by applying these activities: self-care activities support, continuity home visit, laboratory monitoring, DM group providing to exchange experiences and give willpower.100% of participants were satisfied with the program. Also, almost all of the health personnel, caregivers, and village health volunteers highly accepted that this program could decrease DM complication in DM patients. Moreover, it was properly use in the real situation. The effect of the Tri-linked model (TLM) will be discussed as follows:

1) Individual improvement (Self-efficacy, self-care activities:self)

The program started with individualized feedback to the DM patients about their DM knowledge, self-care activities, fasting plasma glucose level and HbA1c, in a practical training which identified what self-care activities contributed towards high level of FPG and HbA1c and set individual FPG loss targets.

The intervention program can improve DM knowledge of the participants at the12th week compared to the comparisons. All hypotheses formulated at the onset of the project regarding DM knowledge were found to be true after finalizing the attempt. The participants of the experimental group learnt to understand diabetes better by being informed on the pathology of diabetes, best food choices for DM patients, DM complications, and appropriate self-care activities. Diabetes education is provided based on empowerment philosophy, psychological theory as well as diabetes treatment regimen and is supported by health personnel. It is effective in changing beliefs and initiating the necessary lifestyle adjustments. (Skinner T, Cradock S, Arndel F, Grahan W, 2003) while the comparisons derived regular care services from THPH. This showed that participation in the experimental group was more effective in improving DM knowledge than the usual care. The several study examining the effects of diabetes education found that self-care behaviors improved as well as the understanding of the nature of diabetes mellitus and the

metabolic and psychological status of the patients (Barlow et al., 2000: 53-69; Brown, 1988: 223-230 ; Norris et al., 2002: 1159-1171 ; Glasgow et al., 1992: 61-74).

The experimental group received both cognitive and skill training regarding diabetes care for12 weeks. Besides, the improvement of knowledge, problem solving skills, physical exercise, medicine compliance, and complication observation improved by daily self-report, weekly home visit and FPG examination, monthly sharing experiences, and HbA1c examination at 12th week. Moreover, DM handbooks were distributed for study at home to the participants and their families or caregivers in the experimental group shared their experience, and their daily self-report with the health personnel when home visit. Furthermore, the researcher used a combination of helping techniques; teaching, support, guidance, advice, and providing a suitable environment, using the circumstances of a good relationship between health personnel and patients. These strategies created trust and a good relationship between the researcher, the health personnel, the patients and their families or caregivers. Also, the health personnel individualized evaluated, and feed backed daily self-report to the patients and their caregivers when weekly home visit. All these methods stimulated the participants to learn about diabetes care and motivated them to change their behaviors. This finding is in agreement with a study by Mazzuca (Mazzuca et al., 1986: 1-10) on the effect of a systemic education program for patients with diabetes on self-care behavior. The result showed that self-care skills and compliance behaviors of the participants of the experimental group were significantly different compared with the comparisons. A positive attitude to relapse experience should be fostered to encourage patients to self- awareness and help them to identify their problems and get back on track as soon as possible.

The intervention program was able to reduce FPG levels effectively at the 12th week because the patients paid more attention to self-care activities. Additionally, they gained more benefits from the Tri-linked model, such as, daily self-report, weekly home visit, monthly sharing experience, weekly FPG, and HbA1c examination. The results of the present study is consistent with the study of Morris (Morris, 1998: 493-497). Morris (1998) explored self-care experience of Thai patients with type-2 diabetes who were not successful in controlling their blood glucose levels “in control”; they did not follow strictly their self-care regimens. The participants

who can control their FPG showed more ability to control themselves than did the participants who could not , along with the understanding of appropriate health behaviors, dietary control practices, success in controlling their blood glucose levels and belief that appropriate health behaviors which would encourage them to maintain FPG control and continue to positively change their health behavior. In addition, there are several factors related to blood glucose levels such as the progression of disease in each individual, changes in life patterns, interference from other illness, and changes in energy expenditure. However, long time control of FPG is difficult for patients. Some studies indicated that DM patients just controlled dietary intake 2-3 days before the FPG examination, so that their FPG would be reduced to normal levels (Pagana and Pagana, 1994).

The participants in the experimental group were able to control HbA1c level better than the comparisons due to the fact that they were successful in controlling their blood glucose levels and followed strictly their self-care regimens and compliance behaviors .The close take care of family, health personnel, and peer group helped the participants to evaluate their health and consistently control their fasting plasma glucose until their HbA1c decreased. The THPH personnel stated: “Normally, diabetes patients usually have one or more complication symptoms when they follow up.But, after the program was performed, most of them did not complain about their complications. Furthermore, FPG steadily decreased at all times” The results of the present study is consistent with the various studies, interventions that reduce HbA1c correspondingly reduce the risk of complications (Ohkubo et al, 1995 ; Koenig et al., 1976). Regular HbA1c measurement allows health care providers to determine whether the patient’s metabolic control has been maintained within the target range, and it detects departures from the target range in a timely fashion. (American Diabetes Association, 2004). Prolonged elevated HbA1c values are a risk factor for many associated diabetic conditions such as retinopathy, neuropathy, and macrovascular complications.(Diabetes Control and complications Trial Research Group, 1993). As a result, Prolonged high level of fasting plasma glucose in diabetes patients is themost common cause of blindness, end-stage renal disease (Creager et al, 2003), and limb amputation (Beckman et al., 2002).

The intervention program could enhance human accomplishment of the participants in the experimental group, so that they have a power and confidence to control their disease. The result is consistent with the study of Mansin (2009) which examined the effectiveness of health education teaching by applying the self-efficacy theory and social support enhancing exercise-promoting behavior among coronary artery bypass graft surgery patients in Siriraj hospital. The program could help patients better perceive their efficacy because they saw the picture, and model from VDO, and in the manual of exercises after cardiocenthesis. This added them more knowledge, and they had more confidence in taking exercise. In addition, they were socially supported, reinforced, and stimulated by the medical personnel, and relative caretakers, who drew practical consequences among the experimental group. It affected more correctly, and appropriate exercises, and better than the comparison group.

2) Environmental improvement: Social support (Care collaboration of family, community:social)

Individual counseling for patients, and caregivers, and providing activities for DM in the community was performed in this section. The aim of individual counseling for patients, DM patient's families or caregivers was to focus on the participants' perception. Nutritionists and mentors provided advice, recommendations and suggestions to participants and DM patient's families or caregivers during home visit. This approach was to ensure that all participants and DM patient's families or caregivers had the same understanding. This program provide activities for DM in the community to stimulate the people in the community has a self-awareness for DM prevention, and help create the community for better health behavior change. The intervention program could indicate that the relationship qualities such as companionship, intimacy, low conflict, and attachment should lead to emotional and physical well-being. Therefore, it is good to link social support concept to health and include elevating self-esteem (Rook, 1987; Lakely et al., 1994), contributing to positive appraisals, and promoting active coping with stressful events (Bartholomew et al., 1997; Sarason et al., 1990). In addition, some study found that positive, stable, and secure relationships may fulfill a basic, biological need (Baumeister and Leary, 1995; Bowlby, 1969; Leary and Downs, 1997; Siriwattanapornkul, 2007) investigated the relationships between selected factors and blood glucose level among

patients with diabetes mellitus type II who received health care services in Kaoleaw hospital, Nakhonsawan Province. These results suggested that dietary control behaviors and family social supports were important related factors for controlling blood glucose level among patients with diabetes mellitus type II. Thongnoi (2011) studied the application of the Health Belief Model with social support to improve preventive behavior for cerebrovascular disease among hypertension patients in Tumbon Nonpayom Chonnabot district, Khonkean Province. After the experiment, the experimental group mean score higher than before the experiment and a higher mean than the comparison group for knowledge of cerebrovascular disease, perceived susceptibility of cerebrovascular disease, perceived severity of cerebrovascular disease, perceived benefits of procedure as instructed, and receiving social support. These scores are statistically significantly higher than before the experiment.

In conclusion, a relationship between social support and recovery from illness may be mediated by the effect of support on health behavior. Information from others about proper health care and about coping with illness may influence perceived and actual ability to affect health status instrumental aid, such as non-professional patient care, may also have a direct impact on the patient's well-being, and, information about the esteem in which a person is held by others may influence motivation to get well and consequently increase compliance with medical regimens and performance of health care behaviors.(Cohen and Syme, 1985) Feelings of belonging, elevated self-esteem, and security engendered by social support may also directly aid in recovery from illness. (Jemmott and Locke, 1984)

3) Service delivery system improvement (THPH DM management system:system)

This section of the TLM program composed of many activities such as Finger Plasma Glucose examination by the trained village health volunteers (VHVs): this program used the personal relationship between VHVs and the patients who were in the same community in order to decrease the time that DM patients had to NPO before blood examination and went to the THPH. Using daily self-report as the tool to evaluate how did daily diet consumption affect on FPG level, the participants recorded daily self-report and compared the results by themselves or caregivers before interpretation when the health personnel conduct weekly home visit in order developing

self-awareness of FPG control. Finally, individualized counseling was performed to give willpower and motivate the participants during the program. The participants must cope with the new situation after knowing that they got DM and have to adjust their self-care to the new situation. These processes require time for management until the participants can regain control of the situation. The researcher helped participants to pass through this process by giving information and encouraging patients to solve their problems in a proper way by sharing experiences; monthly exchange experiences class: the mentors who were the DM patients who can control their FPG, shared their observation of their personal experiences of failure in their daily lives and their perceptions of how they turned the failure into learning experiences to effect lasting health behavior changes. HemoglobinA1c (HbA1c) examination was performed at 12^{th} week to examine the long-term glycemic control that associated with DM complications. These activities were integration, and collaboration of individual, community, and health care service delivery to encourage DM patients to controll their disease. As a result, the experimental group had a good attitude for this system. It is congruent with the previous study, which stated that patients with diabetes require skills training including monitoring fasting plasma glucose level, appropriate self-care activities, diet planning, exercise, complications prevention, etc. They also require support for their efforts, successful and less than successful, so that they can become expert managers of their diabetes according to their treatment plan. When diabetes education is provided based on empowerment philosophy, incorporating psychological theory as part of an ongoing diabetes treatment regimen and is supported by health care providers, it is effective in changing beliefs and initiating the necessary lifestyle adjustments. (Skinner et al., 2003) the providers' approval and encouragement for the patient's educational endeavors are essential element in the team philosophy .(Schechter, Walker, 2002). Patients must perceive some immediate benefit from lifestyle changes designed to provide benefits in the long term.(Wolpert and Anderson, 2001)

The Tri-Linked Model in this study was designed to encourage good human relationship among the participants, family, health personnel, and the community. It also improved cognitive process and skill abilities. The program utilized the application of the concept of self-efficacy, social support and THPH policy implementation which were appropriate for the target group; the intervention process was

conducted and evaluated. All session helped the participants to gain a better understanding about DM, diabetes care, and the participants learnt to practice self-care activities both cognitive and practice skills during home visit and meetings. Similarly, the patient families or caregivers obtained well-DM knowledge, skill for diabetes care and support the DM patients. Moreover, THPH personnel at all levels, village health volunteers, and community collaborated to decreased DM problem in community. As a result, holistic care for patients with diabetes was an important concern. This intervention program illustrated that the program improved not only physiological well being but also psychological well being. Maintaining diabetes self-care activities for longer period of time can prevent DM complications because hyperglycemia, the primary clinical manifestation of diabetes, is strongly associated with development of the diabetic complications. (Khaled, Sekaran, Ikram, 2010).It is a challenging issue for health personnel. After the program, proportion of good glycemic control (≤130 mg/dl) among the experimental group (53.33%) was higher than the comparison group (4.44%), and HbA1c ≤ 7 among the experimental group (57.78%) was higher than the comparison group (4.44%).

It can be concluded that the new DM management system of THPH or Tri-linked model (TLM) program was the appropriate DM management in community. It provided collaboration of all sectors, using non-MD team ,changed the roles of health personnel to be the facilitators to support, and encouraged the patients overcome their barriers by themselves in order to decrease DM complication. Additionally, there was a high degree of consensus about the effect and satisfaction of TLM program of all sectors in the community. This program affect for policy implementation; in the beginning was top-down. But finally, it was applied according to the real situation by local implementers (bottom –up) until it became successful.

5.4 Recommendations

5.4.1 The successful policy should be flexible, so that the local implementers can apply it according to the real situation. As a result, the combined of two perspectives of implementation is suitable to policy implementation.

5.4.2 The TLM program should focus on:

5.4.2.1 Participation of all sectors that are health personnel, community, and. participant's self-practice (The patients should record daily self-report and compare the results by themselves (families or caregivers in the case of those who can not write),

5.4.2.2 Using non-MD team to perform. However, team will arrange appointment with physicians in uncontrolled blood level or complication cases.

5.4.2.3 Change health personnel's roles: The health personnel play a role as facilitator to advice, support, encourage and arrange motivational environment for the patients in order to overcome their health problem by themselves together with their families, peer group and community.

5.4.3 For experience sharing class, interpersonal connections should be increased by using mentors, to improve communication and relationship building among the participants, to share failure and success stories, to encourage the participants during and after the program, and to create the community for better DM care management.

5.4.4 Health personnel of DM clinic ought to include the TLM in their routine work. Time of group meeting should be set in connection with the time of other appointments and blood examination. Coordination within health personnel should be made appropriately.

5.4.5 Integration of multidisciplinary team is preferable for the TLM. Therefore, coordination of health personnel in specific areas is inevitably necessary, such as, providing dietary suggestions by dietitian, blood examination by village health volunteers, nurses, and appointments arrangements with physicians.

5.4.6 Health personnel who are responsible for diabetic patients should be trained regularly in self-care activities program for diabetic patients including the TLM technique to increase their skills.

5.4.7 Cost of TLM is higher than regular care service, such as, weekly FPG examination, and HbA1c examination every 3 months.

Diabetes is a serious and costly disease. Per capita, people with diabetes spend approximately 2.4 times more (more than US$ 13,000 a year) on medical costs compared to people without diabetes (ADA., 2003). The annual cost of diabetes in the United states in 2002 was estimated to be US$ 132 billion, which is a dramatic increase

from US$ 98 billion in 1997. The direct medical costs of diabetes more than doubled in that time, from US$ 44 billion in 1997 to US$ 91.8 billion in 2002. Indirect medical expense were estimated to be US$ 40 billion in 2002(ADA.,2003). the annual cost could rise to an estimated US$ 156 billion by 2010 and to US$ 192 billion by 2020 (ADA, 2003).

The medicine cost per visit of diabetes patients in community hospital in Ubonratchathani Province has steadily increased. The medicine cost per visit of diabetes patients rose from 122.55 baht per visit in 2004 to 150.59 baht per visit in 2006 and to 228.71 baht per visit in 2008

Moreover, it was found that nearly half of diabetes patients in one of THPH in Ubonratchathani Province had diabetes complications. As a result, this situation trends to create more expenditure. Therefore, this program has more cost-benefit when compared to the results.

TLM is a way of coordinating care and ensuring that people gain the support they need at an appropriate time. Evidence suggests that planned, proactive care could lead to a better quality of life and improved health outcomes for people with chronic disease (Krause, 2005; Ouwens et al, 2005; Yu et al., 2006)

5.4.7 In the real situation, weekly home visit by health personnel is difficult to perform because of their other routine work loads. However, if we want to achieve THPHs' objectives, extra health personnel and trained-Village health volunteers for home visitation would be of great significance to the success of program.

5.5 Suggestions for Further Studies

5.1.1 The duration of the study should be extended in order to assess whether or not behavior change is sustained.

5.1.2 The study of factors affecting the effectiveness of Tri-Linked Model (TLM) for diabetic patients and other chronic diseases should be done in order to improve TLM.

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APPENDICES

APPENDIX A

INFORMED CONSENT FORM

เอกสารชี้แจงการวิจัยแก่ผู้ยินยอมตนให้ทำการวิจัย

ชื่อโครงการวิจัย **การเสริมสร้างพลังบทบาทของโรงพยาบาลสร้างเสริมสุขภาพตำบล กรณีศึกษาการแปรงรูปแบบการดูแลผู้ป่วยในชุมชนสู่การปฏิบัติใน จังหวัดอุบลราชธานี**

สถานที่ที่ทำการวิจัย **โรงพยาบาลส่งเสริมสุขภาพตำบลโนนเกษม, โรงพยาบาลส่งเสริมสุขภาพตำบลราษฎร์สำราญ อำเภอวารินชำราบ จังหวัดอุบลราชธานี**

หัวหน้าโครงการ **นางจุไรรัตน์ ศรีศิริ**

ความเป็นมา และความสำคัญ

ในภาวะที่สังคมไทยมีการเปลี่ยนแปลง จากสังคมเกษตรกรรมเพื่อเลี้ยงดูเฉพาะในครอบครัว เป็นเกษตรกรรมเพื่อการตลาด และการส่งออก ลักษณะวิ๔ชีวิตความเป็นอยู่ สถานะสุขภาพ ตลอดจนพฤติกรรมสุขภาพ มีการเปลี่ยนแปลงจนทำให้โรคไม่ติดต่อเพิ่มจำนวนสูงขึ้นอย่างมาก ซึ่งรวมถึงโรคเบาหวาน

เบาหวานเป็นโรคเรื้อรังที่เป็นปัญหาสาธารณสุขทั่วโลก เกิดจากความผิดปกติของระบบต่อมไร้ท่อในการหลั่งฮอร์โมนอินซูลินจากตับอ่อน มีผลให้ระดับน้ำตาลในเลือดสูงกว่าปกติ จำนวนผู้ป่วยเบาหวานมีแนวโน้มเพิ่มขึ้นเนื่องจากพฤติกรรมสุขภาพไม่เหมาะสม ได้แก่ภาวะโภชนาการเกิน และการขาดการออกกำลังกาย เป็นต้น ในปี 2545 องค์การอนามัยโลกได้ประมาณการผู้ป่วยเบาหวานราว 170 ล้านคน และจะเพิ่มขึ้นเป็น 366 ล้านคนในปี พ.ศ. 2573

เบาหวานเป็นโรคเรื้อรังที่มีผลกระทบต่อการทำงานของอวัยวะทุกระบบของร่างกายทำให้สุขภาพของผู้ป่วยเสื่อมเร็วกว่าปกติ จึงส่งผลให้ความสามารถในการดูแลตนเองลดลง และหากไม่ได้รับการส่งเสริมให้ดูแลตนเองอย่างถูกต้อง และเหมาะสมแล้วจะก่อให้เกิดภาวะแทรกซ้อนได้ง่าย และรวดเร็วจนเป็นสาเหตุให้ผู้ป่วยสูญเสียชีวิตก่อนวัยอันควร ถึงแม้ว่าปัจจุบันจะยังไม่มีวิธีที่จะรักษาโรคเบาหวานให้หายขาดได้ แต่มีวิธีที่สามารถควบคุมมิให้อาการของโรครุนแรง หรือเกิดภาวะแทรกซ้อนได้ โดยมีการควบคุมอาหาร การออกกำลังกาย การได้รับการรักษาทางยาอย่างต่อเนื่องและสม่ำเสมอตลอดจนการดูแลรักษาสุขภาพตนเองให้แข็งแรง

ปัจจุบันการรักษาผู้ป่วยเบาหวาน มักประสบปัญหากับภาวะแทรกซ้อนต่างๆซึ่งเป็นผลจากการป่วยเป็นเบาหวานในระยะเวลานาน และปัจจัยหนึ่งที่มีผลต่อการรักษาได้แก่การไม่ให้ความร่วมมือในการรักษาของผู้ป่วยเบาหวาน ซึ่งส่งผลต่อผู้ป่วยเบาหวานมีคุณภาพชีวิตที่ลดลง องค์การอนามัยโลกได้กำหนดวัตถุประสงค์ในการดูแลผู้ป่วยเบาหวานใน 2 ลักษณะดังนี้

1. ให้การดูแลสุขภาพ และรักษาระดับคุณภาพชีวิตของผู้ป่วยเบาหวาน โดยผ่านกระบวนการดูแล และให้สุขศึกษาอย่างมีประสิทธิภาพ
2. ทำการรักษา และป้องกันภาวะแทรกซ้อนที่อาจเกิดขึ้น เพื่อลดอัตราป่วย อัตราตาย และค่าใช้จ่ายในการรักษา

สถานการณ์โรคเบาหวานในจังหวัดอุบลราชธานี ปี 2549 มีผู้ป่วยเบาหวานทั้งสิ้น จำนวน30,694 คน กลุ่มเสี่ยงที่มีระดับน้ำตาลในเลือด มากกว่า 125 mg/dl ส่วนใหญ่เป็นผู้หญิง 4.09% ภาวะแทรกซ้อนของโรคเบาหวานที่สำคัญคือ ไตเสื่อม ร้อยละ 56 และจอประสาทตาเสื่อม ร้อยละ 17.5 % นอกจากนี้ค่ายาของผู้ป่วยเบาหวานที่มาพบแพทย์เพิ่มขึ้นจากเดิม 122.55 บาท/ ครั้ง ในปี 2547 เป็น 150.59 บาท /ครั้ง ในปี 2549 และเพิ่มเป็น 228.71 บาท /ครั้ง

จากปัญหาแความสำคัญดังกล่าวทำให้ผู้วิจัยมีความสนใจที่จะหาวิธีการดูแลสุขภาพตนเองที่เหมะสมในผู้ป่วยเบาหวานชนิดที่ 2โดยประยุกต์ใช้แนวคิดแรงสนับสนุนทางสังคม, การรับรู้ และการบริหารจัดการโรคด้วยตนเอง เพื่อพัฒนาโปรแกรมดูแลสุขภาพตนเอง โดยคาดว่า โปรแกรมดังกล่าวจะช่วยให้ผู้ป่วยเบาหวาน มีความรู้ความเข้าใจโรคเบาหวาน ทักษะในการดูแลตนเอง คุณภาพชีวิต และระดับน้ำตาลในเลือดดีขึ้น

วัตถุประสงค์ของโครงการ

เพื่อประเมินผลโปรแกรมดูแลตนเอง โดยประยุกต์แนวคิดของแรงสนับสนุนทางสังคม, การรับรู้ และการบริหารจัดการโรคด้วยตนเองในการเปลี่ยนแปลงพฤติกรรมสุขภาพด้านความรู้ของเบาหวาน กิจกรรมในการดูแลตนเอง คุณภาพชีวิต และระดับน้ำตาลในเลือดหลังจากสิ้นสุดโครงการในผู้ป่วยเบาหวานชนิดที่ 2 ในระดับชุมชน

วิธีการวิจัย

เมื่อท่านเข้าร่วมในการศึกษานี้ ท่านจะได้รับการสอนความรู้ และพัฒนาทักษะในการดูแลตนเองเกี่ยวกับโรคเบาหวานในหัวข้อ โรคเบาหวานคืออะไร การจัดการเรื่องอาหาร การรับประทานยา การออกกำลังกายการดูแลเท้า และการประเมินสุขภาพตนเอง , ท่านจะได้รับการตรวจระดับน้ำตาลในเลือด และตอบแบบสอบถาม ซึ่งประกอบด้วย แบบบันทึกข้อมูลส่วนบุคคล แบบทดสอบความรู้เรื่องโรคเบาหวาน แบบวัดกิจกรรมการดูแลตนเอง จำนวน 2 ครั้ง คือก่อนเข้าร่วมโครงการ และหลังสิ้นสุดโครงการโดยท่านไม่เสียค่าใช้จ่ายใดๆทั้งสิ้น

เหตุผลที่เชิญชวนให้ผู้ยินยอมตนให้ทำการวิจัยเข้าโครงการวิจัย

เนื่องจากท่านมีคุณสมบัติตรงกับกลุ่มผู้ป่วยที่ต้องการศึกษา คือเป็นโรคเบาหวานชนิดที่ 2 และมีการควบคุมระดับน้ำตาลในเลือดมากกว่า 130 มิลลิกรัมเปอร์เซ็นต์ หรือมีการควบคุมระดับน้ำตาลในเลือดไม่คงที่

ระยะเวลาที่ตอบแบบสอบถามในผู้ยินยอมตนให้ทำการวิจัย

ประมาณ 20-30 นาที

ประโยชนที่คาดว่าจะเกิดขึ้นทั้งต่อผู้ยินยอมตนให้ทำการวิจัย และต่อผู้อื่น

การศึกษานี้จะช่วยส่งเสริมการดูแลตนเองของท่านเกี่ยวกับโรคเบาหวานโดยใช้โปรแกรมที่พัฒนาขึ้น เพื่อประโยชน์ในการควบคุม และป้องกันภาวะแทรกซ้อนของโรคเบาหวานที่อาจเกิดขึ้นในอนาคต และเป็นแนวทางในการจัดบริการส่งเสริมการดูแลตนเองในผู้ป่วยเบาหวาน ชนิดที่ 2 ในชุมชนให้มีประสิทธิภาพต่อไป

ความเสี่ยง หรือความไม่สบายใดที่คาดว่าจะเกิดขึ้นกับผู้ยินยอมตนให้ทำการวิจัยในการเข้าร่วมการศึกษาวิจัย

การศึกษานี้ไม่ก่อให้เกิดอันตราย หรือความเสียหายใดๆ แก่ท่านที่ให้ทำการวิจัยเป็นเพียงการตอบแบบสอบถาม และเข้าร่วมกลุ่มเรียนรู้การจัดการดูแลตนเอง การเจาะเลือดจากปลายนิ้วมือประมาณ 1 หยด หรือ 0.5 มิลลิเมตร โดยงดอาหารและเครื่องดื่มทุกชนิด ไม่น้อยกว่า 8 ชั่วโมง ซึ่งเป็นข้อกำหนดในการตรวจระดับน้ำตาลในเลือด และผลการศึกษาจะเป็นประโยชน์ในการดูแลตนเองของผู้ป่วยเบาหวานชนิดที่ 2 การเก็บข้อมูลในการวิจัยใช้แบบสอบถามโดยให้อาสาสมัครตอบแบบสอบถามด้วยตนเอง ผู้ตอบแบบสอบถามจะได้รับคำอธิบายก่อนตอบแบบสอบถามจนเป็นที่พอใจ และสามารถซักถามข้อสงสัยจากผู้วิจัย/ผู้ช่วยวิจัยได้ ขณะตอบแบบสอบถามหากมีข้อมูลที่ผู้ตอบไม่อยากตอบ ผู้ตอบแบบสอบถามสามารถหยุด หรือบอกเลิกได้ ข้อมูลเฉพาะของแต่ละบุคคล จะเก็บไว้เป็นความลับ ส่วนผลการศึกษาจะนำเสนอในภาพรวม นอกจากนี้ผู้วิจัยไม่ได้กระทำการใดๆ ที่เป็นอันตรายหรือก่อให้เกิดความเสื่อมเสียชื่อเสียงต่อผู้ตอบแบบสอบถาม จึงไม่มีผลกระทบในทางลบต่อกลุ่มประชากรตัวอย่าง

ขอบเขตการดูแลรักษาความลับของข้อมูลต่างๆของผู้ยินยอมตนให้ทำการวิจัย

ข้อมูลที่ได้จากแบบสอบถาม ผลการตรวจทางห้องปฏิบัติการ และการเข้ากลุ่มแลกเปลี่ยนประสบการณ์ ผู้วิจัยรับรองว่า จะเก็บข้อมูลเฉพาะของผู้ตอบแบบสอบถามเป็นความลับ และจะเปิดเผยได้เฉพาะในรูปที่เป็นสรุปผลการวิจัย หรือทำได้เฉพาะภาพรวมเท่านั้นสิทธิผู้ยินยอมตนให้ทำการวิจัยจะถอนตัวออกจากโครงการวิจัยได้ทุกเมื่อ โดยไม่กระทบต่อการรักษาตามปกติ

ผู้รับผิดชอบที่ผู้ยินยอมตนให้ทำการวิจัยสามารถติดต่อได้โดยสะดวก กรณีมีเหตุจำเป็น

ชื่อ จุไรรัตน์ ศรีศิริ
ที่อยู่ 240/3 ถนนบูรพาใน ตำบลในเมือง อำเภอเมือง จังหวัดอุบลราชธานี
โทรศัพท์ 045-240800

หนังสือยินยอมตนให้ทำการวิจัย

โครงการวิจัยเรื่องการสร้างพลังบทบาทของโรงพยาบาลสร้างเสริมสุขภาพตำบลกรณีศึกษาการแปรรูปแบบการดูแลผู้ป่วยในชุมชนสู่การปฏิบัติในจังหวัดอุบลราชธานี

วันที่ให้คำยินยอม วันที่ ..... เดือน.....พ.ศ.....

ข้าพเจ้า (นาย/ นาง/ นางสาว)..... ขอทำหนังสือนี้ไว้ต่อหัวหน้าโครงการเพื่อเป็นหลักฐานแสดงว่า

ข้อ 1. ก่อนลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยให้ทราบถึงวัตถุประสงค์ของการวิจัย วีการวิจัย อันตราย หรืออาการที่อาจเกิดขึ้นจากการวิจัย หรือจากยาที่ใช้ รวมทั้งประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว

ข้อ 2. ผู้วิจัยรับรองว่าจะตอบคำถามต่างๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบัง ซ่อนเร้น จนข้าพเจ้าพอใจ

ข้อ 3. ข้าพเจ้าเข้าร่วมโครงการวิจัยนี้โดยสมัครใจ และข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยนี้เมื่อใดก็ได้ และการบอกเลิกการเข้าร่วมวิจัยนี้จะไม่มีผลต่อการรักษาโรคที่ข้าพเจ้าจะพึงได้รับต่อไป

ข้อ 4. ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะของตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้เฉพาะในรูปที่เป็นสรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่างๆที่เกี่ยวข้องกระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ข้อ 5. ผู้วิจัยรับรองว่าหากเกิดอันตรายใดๆ อันเนื่องจาการวิจัยดังกล่าว ข้าพเจ้าจะได้รับการรักษาพยาบาลโดยไม่คิดมูลค่าตามมาตรฐานวิชาชีพ และจะได้รับการชดเชยรายได้ที่สูญเสียไประหว่างการรักษาพยาบาลดังกล่าว ตลอดจนเงินทดแทนความพิการที่อาจเกิดขึ้น

ข้อ 6. ผู้วิจัยรับรองว่า หากมีข้อมูลเพิ่มเติมที่ส่งผลกระทบต่อการวิจัย ข้าพเจ้าจะได้รับการแจ้งให้ทราบทันที โดยไม่ปิดบังซ่อนเร้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้วมีความเข้าใจดีทุกประการ และได้ลงนามในใบยินยอมนี้ด้วยความเต็มใจ

ลงชื่อ ..... ผู้ยินยอม

(.....)

ลงชื่อ ..... พยาน

(.....)

ลงชื่อ ..... พยาน

(.....)

APPENDIX B

QUESTIONAIRES, ENGLISH AND THAI VERSION

ID Number……

Research title "The Empowering of Tambon Health Promoting Hospital Roles for Diabetes care management: A case study of the Implementing Care model in the community in Ubonratchathani province."

Instruction: Interview form consists of 3 parts

Part 1 General characteristics
Part 2Opinion of THPH policy implementation
Part 3Diabetes care management in community.

The answers to this interview form will be used for research purpose only. Some questions are personal. But, answers would be desirable in order to get useful information. Your answers will be kept completely confidential and will not be used for any other purposes. Please make every effort to answer each question as honest as possible. If you have any questions, please feel free to ask the interviewer.

Sincerely thanks for your cooperation

Researcher

Interview questionnaire

Part 1 General characteristics

Please tick the correct answer with the symbol "/ " or complete your answer in the blanket

Name of Tambon Health Promoting Hospital (THPH) ……

Address…….Moo……Tambon…….District…….

Ubonratchathani province.

Name of CUP ……..

1. Gender ☐ 1. male ☐ 2. Female

2. Age …… years (round)

3. Marital status

☐ single ☐ Married

☐ Widowed ☐ Divorced / Separate

☐ Others

4. Education level

☐ Secondary school ☐ Diploma

☐ Bachelor degree ☐ Master degree

☐ Over Master degree ☐ Others …….

5. Position

☐ Director ☐ Public health scholar

☐ RN ☐ TN

☐ Others …….

6. Length of working…… years

Part 2: Tambon Health Promoting Hospital (THPH) policy implementation

Instruction: Please read each statement, assess your feelings, and tick the best answer for you with the symbol "/ "

Meaning of the answer

Strongly agree	refer to agreement	80-100 %
Agree	refer to partial agreement	60-80 %
Neither agree nor disagree	refer to hesitate to agreement or disagreement	40-60 %
Disagree	refer to partial disagreement	20-40%
Strongly disagree	refer to disagreement	0-20 %

Part 2 THPH Policy Implementation

Item	Opinion of THPH Policy	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1.	The THPH policy was supported by the appropriate theory					
2.	The goals of THPH policy are clear					
3.	The objectives of THPH policy are clear and well-understood					
4.	The goals are congruent with Objectives of THPH policy					
5.	The standards and Key performance indicators are clear					
6.	Means is congruent with the THPH policy					
7.	The policy is congruent with the central policy and the previous policy					
8.	The health personnel at all level in your province understand the goal of THPH policy in the same way					
9.	There was pilot project before this policy was performed in coverage in the province					
10.	The concept of THPH policy is appropriately performed in your community					
11.	The priority stages of THPH policy are clear					
12.	Mission and authority is congruent with the policy objective					
13.	The process of THPH policy implementation is clear					

Item	Opinion of THPH Mission & authority	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
14.	The project is congruent with the goals and objectives of the main policy					
15.	Means of THPH policy were simplified to be understood					
16.	The rules and regulation are clear					
17.	Reward and Punishment for health personnel were determined					
18.	The authority allocation is clear					
19.	The coordination between THPH agencies has been smooth					
20.	The mission standard between THPH agencies were determined					
21.	The budget of THPH was sufficient					
22.	The infrastructure of THPH was appropriate					
23.	The instruments of THPH were sufficient					
24.	The budget was supported on time					
25.	Sufficient health personnel according to the THPH policy standard					
26.	There is appropriate health personnel allocation					
27.	There is continuity of knowledge and skills support for health personnel					

Item	Opinion of Resources	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
28.	There is support system from the central government consistency					
29.	Telemedicine was well-used for curative consultancy					
30.	Sufficient medicines were supplied to your THPH both in quantity and items according to THPH standard.					
31.	The infrastructure of THPH is appropriated to the performance					
32.	The administration structure of THPH was not congruent with the policy					
33.	THPH working was flexible					
34.	The coordination was smooth both inside and outside the THPH					
35.	Your THPH had been successful in the previous policy					
36.	The good atmosphere in workplace make the health personnel willing to work					
37.	Your THPH do not give opportunity for health personnel to express their ability					
38.	Your THPH receive benefit from THPH policy to develop the quality of service delivery system					

Item	Opinion of Resources	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
39.	Your supervisor absolutely has been willing to perform THPH policy accomplishment					
40.	THPH policy is the direct benefit for the people in the community					
41.	Public relationship by radio and Television made peopleunderstand well the roles of THPH					
42.	You always had inconveniences when contacting with Tambon administrative organization (TAO)					
43.	Your THPH also received sufficient budget support from TAO					
44.	Your THPH always receive the support from the high-level agencies					
45.	Your THPH received the knowledge from the central consistently					
46.	There has been help and support system from the central consistently whenever THPH encountered problems					
47.	Your THPH has received good collaboration from the community to perform THPH policy					

Item	Opinion of Resources	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
48.	Your THPH was admired by the clients more than before					
49.	Your THPH has established the THPH administrative committee for THPH policy implementation support					
50.	Your THPH always provide the administrative committee meeting					
51.	The health problems in the community that trend to be violent will be solved by THPH policy					
52.	THPH should provide proactive strategy mainly health promotion and prevention in order to decrease curative budget decreasing					
53.	THPH can not provide proactive service because of work overload					
54.	You worried about how to accomplish the performance of this policy					
55.	The THPH was not different from the previous policy, PCU, only the name has been changed.					
56.	THPH policy usual to have a problem at the beginning.But, in the end it was successful because of collaboration of all sectors					

Item	Attitude of the health personnel	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
57.	The routine work is appropriate; The THPH policy made the health personnel work overload					
58.	You have been aspired to work by the means of THPH					
59.	You attempted to work load for THPH to achieve its intended objectives.					
60.	Your working goals are congruent with THPH policy					
61.	You were trained for the capacity building in THPH policy					
62.	Your THPH received the means manual to perform for the policy accomplishment					
63.	THPH policy had a clear standard to perform					
64.	THPH had an evaluation and regulation process					
65.	The means to perform THPH policy were determined by CUP and your THPH					
66.	CUP always support the health personnel for the THPH					
67.	The Provincial health office provided help and support system according to THPH policy					
68.	The Provincial Health Office provided the THPH meeting for experience among THPH consistently					

Item	THPH Evaluation & Regulation	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
69.	The District Health Office provided help and support system according to THPH policy					
70.	The THPH policy was flexible to perform					
71.	Your THPH personnel are proud to work with their supervisor and try to work for accomplishment					
72.	Your supervisor understood and had skills in administration					
73.	Your supervisor assigned and empowered to the health personnel regarding their abilities					
74.	Your supervisor paid attention to performance support for accomplishment					
75.	Your supervisor was fair					
76.	Your supervisor participated in performing and close regulation					
77.	Your supervisor can solve the late policy implementation					
78.	Your supervisor took responsibility for performance and gave advice whenever barriers were encountered.					
79.	Your supervisor gave an opportunity to everyone to gave their opinion					
80.	Your supervisor often had wrong decision making					

Part 3 DM management of THPH

Item	DM management of THPH	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
81.	Principles of DM management were prevention, control, and symtomatic treatment for violence and complications decreasing. If the patients get the appropriate care and continuity, they will have good quality of life.					
82.	DM care for good quality of life depend on collaboration of 3 stakeholders: patients and their families, community, and service delivery system					
83.	DM problem solving in community is difficult to perform because of environtment change and because the problems were so sophisticated.					
84.	Your THPH screened and classified the DM patients into the patients and the well-being in order to individual group service.					
85.	Your THPH had both individual and community data base management					
86.	Your THPH provided integrated DM service in THPH (prevention, curative, health promotion, and rehabilitation)					
87.	The patients who missed follow up ,or had a complication were home visited by health personnel					
88.	Your THPH and the community provided the health promotion activities for risk decreasing of DM					

Item	DM management of THPH	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
89.	CUP set the fast track for DM referral system for THPH					
90.	Telemedicine was well-used to consult between your THPH and the doctor from CUP					

Problems and suggestion

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Thank you

หมายเลขแบบทดสอบ.....

<u>แบบสอบถาม</u>

การสร้างพลังบทบาทของโรงพยาบาลส่งเสริมสุขภาพตำบลในการบริหารจัดการโรคเบาหวาน กรณีศึกษาการแปรรูปแบบการดูแลผู้ป่วยในชุมชนสู่การปฏิบัติในจังหวัดอุบลราชธานี

คำชี้แจง แบบสอบถามฉบับนี้ ประกอบด้วยข้อมูล 3 ตอน คือ
ตอนที่ 1 ข้อมูลทั่วไป
ตอนที่ 2 แบบสอบถามเรื่องการนำนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลสู่การปฏิบัติ
ตอนที่ 3 การบริหารจัดการโรคเบาหวานในชุมชนของโรงพยาบาลส่งเสริมสุขภาพ ตำบล

ผู้วิจัยใคร่ขอความร่วมมือจากท่านในการตอบแบบสอบถาม ซึ่งผลที่ได้จาก การศึกษาครั้งนี้จะเป็นประโยชน์อย่างมากในการหาแนวทางที่เหมาะสม เพื่อใช้พัฒนาและส่งเสริมโรงพยาบาลส่งเสริมสุขภาพตำบลให้มีประสิทธิภาพ และประสิทธิผล มีความยั่งยืน บังเกิดคุณประโยชน์ต่อสังคมและประชาชนต่อไป

อนึ่ง ขอให้ท่านตอบคำถามให้ตรงกับความเป็นจริง และโปรดตอบทุกข้อ ความคิดเห็นของท่านในทุกเรื่องมีคุณค่ายิ่ง คำตอบของท่าน ผู้วิจัยจะถือเป็นความลับไม่เปิดเผย และไม่มีผลใดๆในการปฏิบัติงานในฐานะเจ้าหน้าที่ ของโรงพยาบาลส่งเสริมสุขภาพตำบลของท่าน

นางจุไรรัตน์ ศรีศิริ
นักศึกษาปริญญาเอก
สาธารณสุขศาสตร์ดุษฎีบัณฑิต
คณะสาธารณสุขศาสตร์
มหาวิทยาลัยมหาสารคาม

ตอนที่ 1 ข้อมูลทั่วไป

คำชี้แจง กรุณาเติมเครื่องหมายถูก(/) ลงในช่อง ☐ หรือเขียนคำตอบของท่าน ลงในช่องว่างที่ตรงกับสภาพความเป็นจริงของท่านมากที่สุดลงในช่องว่าง

ชื่อโรงพยาบาลสร้างเสริมสุขภาพตำบล.....หมู่ที่.....ตำบล.....
อำเภอ.....จังหวัด.....
ชื่อโรงพยาบาลแม่ข่าย.....

1. เพศ ☐ ชาย ☐ หญิง
2. อายุ(โปรดระบุจำนวนปีเต็ม) ..... ปี
3. สถานภาพสมรส
   - ☐ โสด
   - ☐ คู่ (อยู่ร่วมกันกับสามีหรือภรรยา)
   - ☐ หม้าย
   - ☐ หย่าร้างหรือแยกกันอยู่
   - ☐ อื่นๆ โปรดระบุ.....
4. จบการศึกษาขั้นสูงสุดในระดับ
   - ☐ ม.6, ปวช. หรือเทียบเท่า
   - ☐ อนุปริญญา, ปวส., ปวท,หรือเทียบเท่า
   - ☐ ปริญญาตรีหรือเทียบเท่า
   - ☐ ปริญญาโท
   - ☐ สูงกว่าปริญญาโท
   - ☐ อื่นๆ(โปรดระบุ).....
5. ตำแหน่งงานของท่านในโรงพยาบาลส่งเสริมสุขภาพตำบล
   - ☐ ผู้อำนวยการโรงพยาบาลส่งเสริมสุขภาพชุมชน
   - ☐ นักวิชาการสาธารณสุข
   - ☐ พยาบาลวิชาชีพ
   - ☐ พยาบาลเทคนิค
   - ☐ เจ้าพนักงานทันตสาธารณสุข
   - ☐ อื่นๆ(โปรดระบุ).....
6. รับราชการมาแล้ว..... ปี

ตอนที่ 2 : แบบสอบถามเรื่องการนำนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลสู่การปฏิบัติ

คำชี้แจง พิจารณาข้อคำถามแต่ละข้อและเลือกคำตอบที่ตรงตามความคิดเห็นของท่านมากที่สุดโดยเติมเครื่องหมายถูก (/) ลงในช่องว่างทางขวามือของข้อคำถาม และโปรดตอบทุกข้อโดยคำตอบแต่ละตัวมีความหมายดังนี้

เห็นด้วยอย่างยิ่ง	หมายความว่า	ท่านเห็นด้วยกับข้อความดังกล่าวทั้งหมด (คิดเป็น 80-100 %)
เห็นด้วย		ท่านเห็นด้วยกับข้อความดังกล่าวบางส่วน(คิดเป็น 60-80 %)
ไม่แน่ใจ		ท่านรู้สึกลังเลใจที่จะเห็นด้วยหรือไม่เห็นด้วยกับข้อความดังกล่าว (คิดเป็น 40-60 %)
ไม่เห็นด้วย		ท่านไม่เห็นด้วยกับข้อความดังกล่าวเป็นบางส่วน (คิดเป็น 20-40 %)
ไม่เห็นด้วยอย่างยิ่ง		ท่านไม่เห็นด้วยกับข้อความดังกล่าวทั้งหมด (คิดเป็น 0-20 %)

ตอนที่ 2 ความคิดเห็นต่อการนำนโยบายสู่การปฏิบัติของโรงพยาบาลส่งเริมสุขภาพตำบล

ข้อที่	ความคิดเห็นเกี่ยวกับนโยบายโรงพยาบาลส่งเสริมสุขภาพ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	นโยบายโรงพยาบาลส่งสริมสุขภาพตำบลมีทฤษฎีที่เหมาะสมรองรับ					
2	เป้าหมายของนโยบายโรงพยาบาลส่งสริมสุขภาพตำบลมีความชัดเจน					
3	วัตถุประสงค์ของนโยบายโรงพยาบาลส่งสริมสุขภาพตำบลมีความชัดเจนเข้าใจง่าย					
4	เป้าหมาย และวัตถุประสงค์ของนโยบายโรงพยาบาลส่งสริมสุขภาพตำบลมีความสอดคล้องกัน					
5	มีการกำหนดตัวชี้วัด และมาตรฐานของการบรรลุผลสำเร็จไว้อย่างชัดเจน					
6	นโยบายโรงพยาบาลส่งสริมสุขภาพตำบลและกลวิธีการดำเนินงานมีความสอดคล้องกัน					
7	นโยบายมีความสอดคล้องกับนโยบายจากส่วนกลางและนโยบายอื่นๆทีเกี่ยวข้องที่ได้มีการดำเนินการอยู่ก่อนแล้ว					
8	บุคลากรทุกระดับในจังหวัดของท่านมีความข้าใจเป้าหมายของนโยบายโรงพยาบาลส่งสริมสุขภาพตำบลไปในทิศทางเดียวกัน					
9	มีการนำนโยบายทดลองใช้ในกลุ่มเป้าหมายบางส่วนก่อนที่จะดำเนินการครอบคลุมทั้งจังหวัด					
10	ท่านคิดว่าแนวคิดตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลสามารถนำมาใช้ในบริบทของพื้นที่ที่ท่านรับผิดชอบได้เป็นอย่างดี					

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
9	มีการนำนโยบายทดลองใช้ในกลุ่มเป้าหมายบางส่วนก่อนที่จะดำเนินการครอบคลุมทั้งจังหวัด					
10	ท่านคิดว่าแนวคิดตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลสามารถนำมาใช้ในบริบทของพื้นที่ที่ท่านรับผิดชอบได้เป็นอย่างดี					

ข้อที่	ความคิดเห็นต่อการกำหนดภารกิจและการมอบหมายงาน	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
11	มีการเรียงลำดับขั้นตอนในการนำนโยบายสู่การปฏิบัติอย่างชัดเจน					
12	มีการกำหนดภารกิจหน้าที่รับผิดชอบให้แก่หน่วยงานต่างๆในการนำนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลไปปฏิบัติสอดคล้องกับวัตถุประสงค์ของนโยบาย					
13	ขั้นตอนการปฏิบัติงานมีความชัดเจน					
14	มีความสอดคล้องของโครงการที่มีต่อเป้าหมายและวัตถุประสงค์ของนโยบายหลัก					
15	วิธีการปฏิบัติงานสามารถเข้าใจได้ง่าย					
16	มีการกำหนดกฎระเบียบการปฏิบัติงานชัดเจน					
17	มีการกำหนดบทลงโทษและการให้รางวัลแก่ผู้ปฏิบัติงาน					
18	มีการจัดสรรอำนาจหน้าที่อย่างชัดเจน					
19	ท่านพบว่าการประสานงานเกี่ยวกับนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลระหว่างหน่วยงานที่เกี่ยวข้องมีความราบรื่น					
20	มีการกำหนดมาตรฐานงานตามภารกิจร่วมกันอย่างชัดเจนระหว่างหน่วยงานที่เกี่ยวข้อง					

ข้อที่	ความคิดเห็นต่อทรัพยากร	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
21	มีความเพียงพอของทรัพยากรทางการเงิน					
22	มีความพร้อมในด้านสถานที่					
23	มีความพร้อมในด้านวัสดุ อุปกรณ์ เครื่องมือ เครื่องใช้					
24	การจัดสรรทรัพยากรทางการเงินเหมาะสมกับเวลาในการดำเนินงาน					
25	บุคลากรในการดำเนินงานเพียงพอตามมาตรฐานของนโยบาย					
26	มีความเหมาะสมในการกระจายทรัพยากรไปยัง รพ.สต.อย่างเหมาะสม และทั่วถึง					
27	มีการสนับสนุนทางด้านความรู้และทักษะในการปฏิบัติงานอย่างต่อเนื่อง					
28	มีระบบการให้การสนับสนุนทรัพยากรจากส่วนกลาง					
29	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านสามารถใช้ระบบการให้คำปรึกษาอาการ หรือแนวทางการรักษาผ่านระบบเทคโนโลยีสารสนเทศ (Telemedicine)ได้เป็นอย่างดี					
30	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านได้รับการสนับสนุนยา และเวชภัณฑ์เพียงพอในการปฏิบัติงาน					

ข้อที่	ความคิดเห็นเกี่ยวกับลักษณะหน่วยงานที่นำนโยบายไปปฏิบัติ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
31	โครงสร้างของโรงพยาบาลส่งเสริมสุขภาพตำบลที่ท่านปฏิบัติงานมีความเหมาะสมกับการดำเนินงานขององค์กร					
32	การจัดโครงสร้างในการบริหารงานของโรงพยาบาลส่งเสริมสุขภาพตำบลไม่สอดคล้องกับนโยบาย					
33	มีความยืดหยุ่นในการปฏิบัติงาน					
34	มีความราบรื่นในการประสานงานทั้งภายนอกและภายในโรงพยาบาลส่งเสริมสุขภาพตำบล					
35	รพ.สต.ของท่านมีความสำเร็จในการนำนโยบายไปปฏิบัติในอดีต					
36	บรรยากาศในการทำงานเอื้ออำนวยให้บุคลากรตั้งใจปฏิบัติงานให้สำเร็จตามเป้าหมาย					
37	หน่วยงานของท่านไม่เปิดโอกาสให้ผู้ร่วมงาน แสดงความสามารถในการทำงานเพื่อบรรลุผลสำเร็จ					
38	หน่วยงานของท่านได้รับประโยชน์จากนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลคือทำให้เกิดการพัฒนาระบบบริการให้มีคุณภาพมากขึ้น					
39	ผู้บังคับบัญชาในหน่วยงานของท่านแสดงให้เห็นถึงความตั้งใจอันแน่วแน่ที่จะปฏิบัติตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลให้สำเร็จ					
40	การดำเนินงานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลที่ท่านปฏิบัติงานเป็นประโยชน์ต่อประชาชนในชุมชนโดยตรง					

ข้อที่	ความคิดเห็นเกี่ยวกับ การสนับสนุนทางสังคม	ไม่เห็นด้วย อย่างยิ่ง	ไม่เห็น ด้วย	ไม่แน่ใจ	เห็น ด้วย	เห็นด้วย อย่างยิ่ง
41	การประชาสัมพันธ์โครงการโรงพยาบาลส่งเสริมสุขภาพตำบลผ่านทางสื่อวิทยุ และโทรทัศน์ ทำให้ประชาชนมีความเข้าใจบทบาทของโรงพยาบาลส่งสริมสุขภาพตำบลเป็นอย่างดี					
42	ท่านรู้สึกอึดอัดทุกครั้งในการประสานงานกับองค์การบริหารส่วนตำบลในการดำเนินงานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล					
43	ท่านได้รับงบประมาณสนับสนุนจาก อบต.ในการทำงานของโรงพยาบาลสร้างเสริมสุขภาพตำบลอย่างเพียงพอ					
44	รพ.สต.ของท่านได้รับการสนับสนุนทุกครั้งจากหน่วยงานในระดับสูงกว่าในจังหวัดเมื่อขอรับการสนับสนุน					
45	รพ.สต.ของท่านได้รับการสนับสนุนทางด้านวิชาการจากส่วนกลางอย่างสม่ำเสมอ					
46	มีระบบสนับสนุนและช่วยเหลือจากส่วนกลางเมื่อมีปัญหาในการดำเนินงานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล					

ข้อที่	ความคิดเห็นเกี่ยวกับ การสนับสนุนทางสังคม	ไม่เห็นด้วย อย่างยิ่ง	ไม่เห็น ด้วย	ไม่ แน่ใจ	เห็น ด้วย	เห็นด้วย อย่างยิ่ง
47	ท่านได้รับความร่วมมือเป็นอย่างดีจาก ชุมชนในการดำเนินงานตามนโยบาย โรงพยาบาลส่งเสริมสุขภาพตำบล					
48	โรงพยาบาลส่งเสริมสุขภาพตำบลของ ท่านได้รับคำชมจากผู้รับบริการ มากกว่าตอนที่ยังไม่ได้จัดตั้งเป็น โรงพยาบาลส่งเสริมสุขภาพตำบล					
49	โรงพยาบาลส่งเสริมสุขภาพตำบลของ ท่านดำเนินการจัดตั้งคณะกรรมการ บริหารโรงพยาบาลส่งเสริมสุขภาพ ตำบลเพื่อสนับสนุนการดำเนินงาน ตามนโยบายโรงพยาบาลส่งเสริม สุขภาพตำบล					
50	โรงพยาบาลส่งเสริมสุขภาพตำบลของ ท่านจัดประชุมคณะกรรมการบริหาร โรงพยาบาลส่งเสริมสุขภาพตำบล อย่างสม่ำเสมอ					

ข้อที่	ทัศนคติของผู้ปฏิบัติงาน	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
51	ท่านคิดว่านโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลจะช่วยแก้ไขปัญหาสาธารณสุขในระดับชุมชนซึ่งมีแนวโน้มว่าจะรุนแรงขึ้นเรื่อยๆได้					
52	การทำงานของโรงพยาบาลส่งเสริมสุขภาพตำบลควรทำในลักษณะเชิงรุกเน้นการส่งเสริมและป้องกันโรค ซึ่งจะช่วยลดงบประมาณที่ใช้ในการรักษาพยาบาล					
53	ท่านคิดว่าโรงพยาบาลสร้างเสริมสุขภาพตำบลไม่สามารถจัดบริการเชิงรุกได้เนื่องจากภาระงานเดิมมีมากอยู่แล้ว					
54	ท่านมีความกังวล สับสนไม่ทราบว่าจะปฏิบัติงานให้บรรลุวัตถุประสงค์ของนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลได้อย่างไร					
55	ท่านคิดว่านโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลไม่ได้แตกต่างจากนโยบายการจัดตั้งศูนย์สุขภาพชุมชนที่ผ่านมาเพียงแต่เปลี่ยนชื่อให้แตกต่างเท่านั้นเอง					

ข้อที่	ทัศนคติของผู้ปฏิบัติงาน	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
56	ท่านเชื่อว่านโยบายโรงพยาบาลส่เสริมสุขภาพตำบลในระยะแรกอาจมีปัญหาและอุปสรรคในการดำเนินงาน แต่ปัญหาต่างๆจะคลี่คลายเมื่อเวลาผ่านไป เพราะทุกภาคส่วนร่วมมือกัน					
57	การทำงานตามระบบปกติก็ดีอยู่แล้ว นโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลเป็นการเพิ่มงานให้กับเจ้าหน้าที่โดยไม่จำเป็น					
58	แนวทางในการดำเนินงานของโรงพยาบาลส่งเสริมสุขภาพตำบลได้สร้างแรงบันดาลใจในการทำงานให้แก่ท่าน					
59	ท่านเต็มใจทุ่มเทการทำงานมากกว่าปกติเพื่อนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลบรรลุตามวัตถุประสงค์ที่ตั้งไว้					
60	เป้าหมายการทำงานของท่านสอดคล้องกับนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล					

ข้อที่	ความคิดเห็นเกี่ยวกับ มาตรการควบคุม ประเมินผล และกระตุ้นส่งเสริม	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
61	ท่านได้รับการฝึกอบรมเพื่อเพิ่มพูนทักษะและเทคนิคการปฏิบัติ งานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล					
62	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านได้รับคู่มือเอกสารให้คำแนะนำแนวปฏิบัติงาน เพื่อให้บรรลุเป้าหมาย และได้มาตรฐานตามนโยบาย					
63	นโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลมีการกำหนดมาตรฐานการปฏิบัติงานอย่างชัดเจน					
64	นโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลมีการตรวจประเมินรับรองมาตรฐานอย่างเป็นขั้นตอน					
65	โรงพยาบาลแม่ข่าย(CUP)มีการกำหนดแนวทางการดำเนินงานร่วมกับโรงพยาบาลส่งเสริมสุขภาพตำบลของท่าน					
66	โรงพยาบาลแม่ข่ายสนับสนุนทีมสหวิชาชีพร่วมให้บริการที่โรงพยาบาลส่งเสริมสุขภาพตำบลอย่างสม่ำเสมอ					
67	สำนักงานสาธารณสุขจังหวัดได้จัดระบบรองรับเพื่อสนับสนุนการดำเนินงานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล					
68	สำนักงานสาธารณสุขจังหวัดจัดประชุมโรงพยาบาลส่งเสริมสุขภาพตำบลในระดับจังหวัดเพื่อให้ข่าวสารและแลกเปลี่ยนประสบการณ์ในการดำเนินงานอย่างสม่ำเสมอ					
69	สำนักงานสาธารณสุขอำเภอได้จัดระบบรองรับเพื่อสนับสนุนการดำเนินงานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล					
70	การดำเนินงานตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบลมีความยืดหยุ่น และคล่องตัวในการปฏิบัติงาน					

ข้อที่	ความคิดเห็นเกี่ยวกับ ผู้บริหาร	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
71	บุคลากรใน รพ.สต.ของท่านมีความภูมิใจในผู้บังคับบัญชาและพร้อมที่จะปฏิบัติงานตามนโยบายให้สำเร็จ					
72	ผู้บังคับบัญชาของท่านมีทักษะ และความเข้าใจในการบริหารงานเป็นอย่างดี					
73	ผู้บังคับบัญชาของท่านมอบหมายอำนาจหน้าที่แก่ผู้ใต้บังคับบัญชาโดยคำนึงถึงความสามารถ					
74	ผู้บังคับบัญชาของท่านพร้อมที่จะสนับสนุนการดำเนินงานให้บรรลุผลสำเร็จ					
75	ผู้บังคับบัญชาของท่านมีความยุติธรรม					
76	ผู้บังคับบัญชาของท่านมีส่วนร่วมในการดำเนินงานและควบคุมกำกับอย่างใกล้ชิด					
77	ผู้บังคับบัญชาของท่านมีความสามารถในการแก้ไขปัญหาความล่าช้าในการนำนโยบายไปปฏิบัติ					
78	ผู้บังคับบัญชาของท่านร่วมรับผิดชอบในการดำเนินงานและให้ คำแนะนำเมื่อมีปัญหาและอุปสรรค					
79	ผู้บังคับบัญชาของท่านเปิดโอกาสให้ทุกคนแสดงความคิดเห็น					
80	ท่านพบว่าผู้บังคับบัญชาของท่านตัดสินใจผิดพลาดบ่อยครั้ง					

ตอนที่ 3 การบริหารจัดการโรคเบาหวาน ในชุมชนตามนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล

ข้อที่	ความคิดเห็นเกี่ยวกับการบริหารจัดการโรคเบาหวาน ในชุมชน	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
81	หลักการในการบริหารจัดการโรคเบาหวานคือการควบคุม ป้องกันโรค การรักษาพยาบาลตามอาการเพื่อลดความรุนแรงและลดภาวะแทรกซ้อน หากผู้ป่วยได้รับการดูแลรักษาอย่างเหมาะสมและต่อ เนื่องก็จะทำให้มีคุณภาพชีวิตที่ดีและไม่เสียชีวิตก่อนวัยอันควร					
82	การดูแลผู้ป่วยเบาหวานให้มีคุณภาพชีวิตที่ดีจะต้องอาศัยความร่วมมือของหุ้นส่วนสำคัญ 3 ส่วน คือ ผู้ป่วยและครอบครัว, ชุมชน และระบบบริการสุขภาพ					
83	ท่านคิดว่าการดำเนินการแก้ไขปัญหาโรคเบาหวานในชุมชนเป็นเรื่องยากที่จะทำให้สำเร็จ เนื่องจากสภาพสังคมที่เปลี่ยนไปทำให้ปัญหาของผู้ป่วยมีความซับซ้อนมากขึ้น					
84	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านมีการสำรวจประชากรเพื่อคัดกรองโรคเบาหวานโดยแบ่งเป็นกลุ่มผู้ป่วย, กลุ่มสี่ยงและกลุ่มปกติเพื่อประโยชน์ในการจัดกิจกรรมบริการเฉพาะกลุ่ม					
85	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านมีการจัดการระบบข้อมูลผู้ป่วยเบาหวานทั้งรายบุคคล และข้อมูลภาพรวมในชุมชน					
86	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านจัดบริการผู้ป่วยเบาหวานในโรงพยาบาลอย่างผสมผสาน(ทั้งป้องกันโรค, รักษา, ส่งเสริมสุขภาพ, ฟื้นฟู) และต่อเนื่อง					

ข้อที่	ความคิดเห็นเกี่ยวกับการบริหารจัดการโรคเบาหวาน ในชุมชน	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
87	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านติดตามเยี่ยมบ้านผู้ป่วยเบาหวานที่ขาดนัด, ผู้ป่วยที่ลำบากในการมารับบริการที่สถานพยาบาล หรือผู้ป่วยที่มีปัญหาซับซ้อนอย่างสม่ำเสมอ					
88	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านร่วมกับชุมชนจัดกิจกรรมส่งเสริมสุขภาพในชุมชนเพื่อลดภาวะเสี่ยงในการเป็นโรคเบาหวาน					
89	โรงพยาบาลแม่ข่าย (CUP)จัดระบบช่องทางที่รวดเร็วในการรับและส่งต่อผู้ป่วยเบาหวานจากโรงพยาบาลส่งเสริมสุขภาพตำบลของท่าน					
90	โรงพยาบาลส่งเสริมสุขภาพตำบลของท่านใช้ระบบการให้คำปรึกษาอาการหรือแนวทางการรักษาผ่านระบบเทคโนโลยีสารสนเทศ (Telemedicine)กับโรงพยาบาลแม่ข่าย (CUP)ได้เสมอ					

ปัญหาและข้อเสนอแนะอื่นๆ .....
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.....

ขอขอบพระคุณมา ณ โอกาส

ID Number……

Research title "The Empowering of Tambon Health Promoting Hospital Roles for Diabetes Care Management: A case study of the implementing care model in the community in Ubonratchathani Province"

Name of Tambon Health Promoting Hospital……
Address…Moo…Tambon……Warinchamrap District Ubonratchathani Province
Instruction: Interview form consists of 3 parts

Part 1 General characteristics
Part 2 DM knowledge
Part 3 Self-care activities
Part 4 Opinion of self-efficacy
Part 5 Opinion of social support
Part 6 DM management in community.
Part 7 Assessment of Tri-Linked model

The answers to this interview form will be used for research purpose only. Some questions are personal. But, answers would be desirable in order to get useful information. Your answers will be kept completely confidential and will not be used for any other purposes. Please make every effort to answer each question as honest as possible. If you have any questions, please feel free to ask the interviewer.

Sincerely thanks for your cooperation

Researcher

Interview questionnaire

Part 1 General characteristics

Please tick the correct answer with the symbol "/ " or complete your answer in the blanket

Name of Tambon Health Promoting Hospital (THPH) ……

Address…….Moo……Tambon…….District…….

Ubonratchathani province.

Name of CUP ……..

1. Gender ☐ 1. male ☐ 2. Female

2. Age …… years (round)

3. Marital status

☐ 1. single ☐ 2. Married

☐ 3.Widowed ☐ 4. Divorced / Separate

☐ 5.Others …….

4. Education level

☐ 1. Secondary school ☐ 2. Certificate

☐ 3. Bachelor degree ☐ 4. Master degree

☐ 5. Over Master degree ☐ 6 .Others notice ……

5. Monthly family income……Baht

6. Occupation

☐ 1. Retirement/ working home ☐ 2. Government/ State enterprise

☐ 3. Merchant ☐ 4. Employee / Laborer

☐ 5. Farmer ☐ 6. Others notice…….

7. Number of family members…… persons

8. Duration of having DM……..years

9. Do you have any direct relatives (parent, brother, sister) having DM.?

☐ 1. No ☐ 2. Yes

10. Do you have any other disease?

☐ 1. No ☐ 2. Yes

11. Did you have any disease to go to see the doctor recently (within 6 months)

☐ 1. No ☐ 2. Yes

12. Your last fasting plasma glucose ……. mg %

13. Your blood pressure …….mmHg

Instruction part 2-7: Please read each statement,assess your feelings, and tick the best answer for you with the symbol "/ "

Meaning of the answer

Strongly agree	refers toagreement	80-100 %
Agree	refers topartial agreement	60-80 %
Neither agree nor disagree	refers tohesitate to agreement or disagreement	40-60 %
Disagree	refers to partial disagreement	20-40%
Strongly disagree	refers to disagreement	0-20 %

Part 2 : DM knowledge

Item	DM knowledge	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1.	DM is a genetic disease					
2.	Consistency exercise provide FPG controlling					
3.	The most important symptoms of DM are thirsty, polyuria,					
4.	Confusion, weakness, fatigue, hunger result from hypoglycemia symptoms					
5.	Long-term high level of plasma glucose develop to be DM complications					
6.	You strictly self -care according to THPH personnel advisory to control your plasma glucose level					
7.	Vegetable consumption instead of carbohydrate and sugar provide plasma glucose level decreasing.					
8.	DM complication result from uncontrolled plasma glucose level					
9.	only Medication consumption with do not dietary control is sufficient for DM treatment					
10.	Follow-up according to treatment plan is necessary for continuity care					

Part 3 : Self-care activities

Item	Opinion	Always	Usually (4-5 times /week)	Sometimes (2-3 times/ week)	Hardly (≤1time/ week)	Never
11	How often do you have diet controlling?					
12	Do you have desserts such as honey, chocolate, etc.					
13	How often do you exercise?					
14	How often do you observe your abnormal symptoms?					
15	Do you accept medication compliance?					
16	How often do you go to see the doctor?					
17	Whenever you have health problems, you always consult the doctor or health personnel					
18	You only diet-control when you have to see the doctor.					
19	Do you have lipid consumption, such as fried-food, curry with coconut milk, etc?					
20	Do you take any herbs with DM medication?					

Part 4 : Self-efficacy

Item	Opinion	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
21	You are confident you can control plasma glucose level.					
22	You have well-DM knowledge that you can appropriate self-care.					
23	You believe that appropriate self-care of DM patients helps decrease DM complications					
24	You worried that you did not know what to do to control plasma glucose level.					
25	Although you are a DM patient, you are confident to go on your daily routine.					
26	You strictly self-care according to THPH personnel advisory to control your plasma glucose					
27	You are discouraged because you can not control your plasma glucose even though you extremely try to control it.					
28	You believe that you can well do self-care similar to other DM patients who can well-control plasma glucose level.					
29	You think that you must control your plasma glucose level in the appropriate range in order to prevent the complication					
30	You think that you must control plasma glucose level by yourself , others are only the facilitators.					

Part 5 : Social - support

Item	Opinion	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
31	Your family paid attention to your diet controlling and self-care according to the advice of doctors and health personnel.					
32	Do doctors and health personnel gave you an advice on diet controlling and self-care controlling.					
33	Your family gave you an advice whenever you have problems and help you diet-controlling and have appropriate self-care.					
34	You had an experiences sharing with the other DM patients.					
35	You were stimulated by your family to take care yourself according to the doctors or health personnel advice.					
36	Your community gave will-power and support you to control plasma glucose level and self-care according to advisory of doctors and health personnel.					
37	Your family encouraged you to ensure you on diet controlling and self-care by doctors and health personnel advisory.					
38	Your family made you happy.					
39	Your family encouraged you to doctor follow-up					
40	Your family provided you the necessary things consistently					

Part 6 : DM care management system of THPH

Item	Opinion	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
41	THPH health personnel always give you advices for appropriate DM self-care					
42	The health personnel gives you advice consistently whenever you have problem					
43	THPH health personnel take home visit to you consistently					
44	Comparing of self-daily report and plasma glucose level made you have knowledge and control your diet well.					
45	Weekly fasting plasma glucose examination by village health volunteers made you control your diet well.					
46	Close caring system of THPH by home visit and weekly stimulation of health personnel and village health volunteers provide you self-confidence and will-power to self-care.					
47	Home visit of health personnel and village health volunteers who explore the problem and gave the relatives advice helped the family on coverage care					
48	You are confident that close care system of THPH helps you control plasma glucose level all the time					
49	You are not lonely, you are warm and have willpower to self- care because of the experience of of group sharing.					
50	You are confident and pleased to be counselor for appropriate self-care of other DM patients who can not control their plasma glucose level.					

Part 7 : Assessment of Tri-Linked Model

Item	Opinion	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
51.	You have more confident in self-care because of DM care management system of THPH					
52.	You are appreciated in the new DM care management system of THPH.					
53.	Comparing between Daily self-report and FPG level every week provide you to have DM knowledge more than before.					
54.	Blood examination by village health volunteers every week provide you to well dietary control.					
55.	You have no DM complications or your DM complications decrease					
56.	Weekly home visit of THPH personnel and village health volunteers make you have more confident and willing to more self-care					
57.	Your family can coverage care you because of the advisory of THPH personnel and village health volunteers between home visit					
58.	Experience sharing group of THPH provide you have willpower and do not lonely					
59	You can dietary control, exercise and perform self – care activities according to THPH personnel better than before took part in this program.					
60	You have satisfaction to have the same delivery care service , You have not to waste money and time to go to the community or provincial hospital					

แบบสอบถามเลขที่ .....

งานวิจัยเรื่อง “การสร้างเสริมพลังบทบาทของโรงพยาบาลส่งเสริมสุขภาพตำบลในการบริหารจัดการโรคเบาหวานกรณีศึกษาการแปรงรูปแบบการดูแลผู้ป่วยในชุมชนสู่การปฏิบัติในจังหวัดอุบลราชธานี”

บ้านเลขที่ ..... หมู่ที่ ..... ตำบล ..... อำเภอ ..... จังหวัด อุบลราชธานี

คำชี้แจงก่อนตอบแบบสอบถาม

แบบสอบถามประกอบด้วย 7 ส่วน ดังนี้

ส่วนที่ 1 ข้อมูลทั่วไป

ส่วนที่ 2 ความรู้เกี่ยวกับโรคเบาหวาน

ส่วนที่ 3 ความคิดเห็นเกี่ยวกับการดูแลตนเอง

ส่วนที่ 4 ความคิดเห็นเกี่ยวกับการรับรู้ความสามารถตนเอง

ส่วนที่ 5 ความคิดเห็นเกี่ยวกับการได้รับแรงสนับสนุนทางสังคม

ส่วนที่ 6 ความคิดเกี่ยวกับระบบการดูแลผู้ป่วยเบาหวานของโรงพยาบาลส่งเสริมสุขภาพตำบล (รพ.สต.)

ส่วนที่ 7 ความคิดเห็นเกี่ยวกับระบบดูแลผู้ป่วยเบาหวานแบบใหม่ของ รพ.สต. (TRI-Linked Model) ผู้วิจัยใคร่ขอความร่วมมือจากท่านในการตอบแบบสอบถาม ซึ่งผลที่ได้จาก การศึกษาครั้งนี้จะเป็นประโยชน์อย่างมากในการหาแนวทางที่เหมาะสม เพื่อใช้พัฒนาและส่งเสริมโรงพยาบาลสร้างเสริมสุขภาพตำบลให้มีประสิทธิภาพ และประสิทธิผล มีความยั่งยืน บังเกิดคุณประโยชน์ต่อสังคมและประชาชนต่อไป

อนึ่ง ขอให้ท่านตอบคำถามให้ตรงกับความเป็นจริง และโปรดตอบทุกข้อความคิดเห็นของท่านในทุกเรื่องมีคุณค่ายิ่ง คำตอบของท่าน ผู้วิจัยจะถือเป็นความลับไม่เปิดเผย ซึ่งจะนำไปสรุปในภาพรวม และไม่มีผลใดๆในการไปรับบริการในฐานะผู้ป่วยของโรงพยาบาลส่งเสริมสุขภาพตำบลของท่าน

นางจุไรรัตน์ ศรีศิริ
นักศึกษาปริญญาเอก
สาธารณสุขศาสตร์ดุษฎีบัณฑิต
คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหาสารคาม

กรุณาอ่านคำชี้แจงของแบบสอบถามก่อนลงมือทำ และตอบให้ครบทุกข้อ หากไม่เข้าใจในข้อคำถามใด กรุณาสอบถามผู้วิจัย หรือผู้ช่วยวิจัย

ส่วนที่ 1 แบบสอบถามข้อมูลทั่วไป

คำชี้แจง ให้ท่านทำเครื่องหมาย √ ในช่องว่าง ☐ และเติมคำในช่องว่างตามความเป็นจริง

1. เพศ ☐1. ชาย ☐2. หญิง
2. ปัจจุบันท่านมีอายุ ..... ปี (เต็ม)
3. น้ำหนัก..... กิโลกรัม ส่วนสูง ..... เซนติเมตร
4. สถานภาพสมรส

☐1. โสด ☐2. คู่ ☐3. หม้าย ☐4. ย่า/แยก

5. ระดับการศึกษา

☐1. ไม่ได้เรียนหนังสือ ☐2. ประถมศึกษา
☐3. มัธยมศึกษา ☐4. อาชีวศึกษา ☐5. ปริญญาตรี หรือสูงกว่า

6. รายได้ครอบครัวต่อเดือน จำนวน ..... บาท
7. อาชีพ

☐1. เกษียณ / ทำงานบ้าน ☐2. รับราชการ/รัฐวิสาหกิจ
☐3. ค้าขาย ทำธุรกิจส่วนตัว ☐4. รับจ้างทั่วไป
☐5. เกษตรกรรม (ทำสวน ทำนา ทำไร่) ☐6. อื่นๆ ระบุ.....

8. จำนวนสมาชิกในครอบครัว ..... คน
9. ท่านป่วยเป็นโรคเบาหวานประมาณ ..... ปี
10. ท่านมีญาติสายตรง (พ่อ แม่ พี่ น้อง) ที่เป็นเบาหวานหรือไม่

☐1. ไม่มี ☐2. มี

11. ท่านมีโรคประจำตัวหรือไม่นอกจากโรคเบาหวาน

☐1. ไม่มี ☐2. มี ระบุโรค.....

12. ในช่วง 6 เดือนที่ผ่านมา ท่านมีปัญหาด้านสุขภาพถึงขั้นต้องไปพบแพทย์หรือไม่

☐1. ไม่มี ☐2. มี ระบุโรค.....

13. ระดับน้ำตาลในเลือดครั้งสุดท้ายที่ไปพบแพทย์ ..... มิลลิกรัมเปอร์เซ็นต์
14. ความดันโลหิตตัวบน ...../ ตัวล่าง ..... มิลลิกรัมปรอท

คำชี้แจง ส่วนที่ 2 – ส่วนที่ 7 ให้ท่านทำเครื่องหมาย √ ในข้อที่ท่านคิดว่าตรงกับความเห็นของท่าน

ส่วนที่ 2 แบบสอบถามเรื่องความรู้เกี่ยวกับเบาหวาน

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
1	ในครอบครัวที่พ่อ แม่ เป็นโรคเบาหวานมีโอกาสถ่ายทอดถึงลูกหลานได้					
2	การออกกำลังกายสม่ำเสมอจะช่วยให้การควบคุมระดับน้ำตาล					
3	อาการที่มักพบบ่อยของผู้ป่วยเบาหวาน คือ ปัสสาวะบ่อย หิวบ่อย กระหายน้ำ ดื่มน้ำมาก					
4	อาการตาลาย หิวมาก ใจสั่นคล้ายจะเป็นลม เป็นอาการของระดับน้ำตาลในเลือดต่ำ					
5	ผู้ที่เป็นโรคเบาหวานถ้ามีระดับน้ำตาลในเลือดสูงมากๆ จะทำให้เกิดภาวะแทรกซ้อนได้					
6	โรคเบาหวานเป็นโรคที่รักษาให้หายขาดได้					
7	การรับประทานผักมากๆ แทนอาหารพวกแป้ง และน้ำตาลจะช่วยลดระดับน้ำตาลในเลือดได้					
8	ภาวะแทรกซ้อนของโรคเบาหวานเกิดจากการไม่สามารถควบคุมระดับน้ำตาลได้					
9	การรับประทานยาเพียงอย่างเดียวโดยไม่ควบคุมอาหารก็เพียงพอต่อการรักษาโรคเบาหวาน					
10	การไปตรวจตามแพทย์นัดทุกครั้งจำเป็นอย่างยิ่งเพราะจะช่วยให้ท่านได้รับการรักษาต่อเนื่อง					

ส่วนที่ 3 แบบสอบถามเกี่ยวกับการปฏิบัติตัวในการดูแลตนเองของผู้ป่วยเบาหวาน

ข้อที่	ข้อความ	ทุกครั้ง	บ่อยๆ 4 -5 ครั้ง/สัปดาห์	บางครั้ง 2-3 ครั้ง / สัปดาห์	ไม่ค่อยทำ น้อยกว่าหรือเท่ากับ 1 ครั้ง / สัปดาห์	ไม่ทำเลย
11	ท่านควบคุมอาหารบ่อยแค่ไหน					
12	ท่านรับประทานของหวาน เช่น ผลไม้เชื่อม ,ทองหยิบ ทองหยอด, ช๊อคโคแลต, น้ำผึ้ง หรือขนมที่มีน้ำตาลเป็นส่วนประกอบอื่นๆ					
13	ท่านออกกำลังกายบ่อยแค่ไหน					
14	ท่านสังเกตอาการผิดปกติของตัวท่านเอง เช่น มีแผลหายยาก, ชาตามปลายมือปลายเท้า ฯลฯ					
15	ท่านรับประทานยาตามแผนการรักษา					
16	ท่านไปพบแพทย์ตามนัด					
17	เมื่อท่านมีปัญหาเกี่ยวกับโรคเบาหวานท่านขอคำปรึกษาจากแพทย์ หรือเจ้าหน้าที่สาธารณสุข					
18	ท่านควบคุมอาหารเฉพาะช่วงก่อนไปตรวจตามนัดเท่านั้น					
19	ท่านรับประทานอาหารพวกไขมัน เช่น อาหารทอด, แกงกะทิต่างๆ, ขาหมู,หนังไก่ ฯลฯ					
20	ท่านเคยรับประทานยาสมุนไพร ร่วมกับการรับประทานยาโรคเบาหวานหรือไม่					

ส่วนที่ 4 แบบสอบถามเกี่ยวกับความคิดเห็นในการรับรู้ความสามารถตนเอง

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
21	ท่านรู้สึกมั่นใจว่าท่านสามารถควบคุมระดับน้ำตาลในเลือดให้อยู่ในเกณฑ์ปกติได้					
22	ท่านมีความรู้เรื่องโรคเบาหวานเป็นอย่างดี ทำให้ท่านสามารถปฏิบัติตัวได้ถูกต้อง					
23	ท่านเชื่อว่าการปฏิบัติตัวที่ถูกต้อง และเหมาะสมของผู้ป่วยเบาหวาน ทำให้ลดการเกิดภาวะแทรกซ้อนของโรคเบาหวานได้					
24	ท่านกังวลและสับสน ไม่ทราบว่าจะปฏิบัติตัวอย่างไรในการควบคุมระดับน้ำตาล					
25	ท่านมีความมั่นใจในการดำเนินชีวิตประจำวันให้เป็นปกติ แม้ว่าท่านจะมีโรคประจำตัวคือโรคเบาหวาน					
26	ท่านตั้งใจปฏิบัติตัวตามคำแนะนำของเจ้าหน้าที่สาธารณสุขอย่างเคร่งครัดเพื่อควบคุมระดับน้ำตาลในเลือด					
27	ท่านรู้สึกท้อใจที่พยายามเท่าไร ก็ไม่สามารถควบคุมระดับน้ำตาลให้อยู่ในเกณฑ์ปกติได้					
28	ท่านคิดว่าท่านสามารถดูแลตนเองได้ดีเช่นเดียวกับผู้ป่วยเบาหวานคนอื่นที่ควบคุมระดับน้ำตาลในเลือดได้					
29	ท่านคิดว่าท่านจะต้องควบคุมระดับน้ำตาลในเลือดให้อยู่ในเกณฑ์ที่เหมาะสมจะได้ไม่เกิดภาวะแทรกซ้อน					
30	ท่านคิดว่าท่านต้องมุ่งมั่นที่จะควบคุมระดับน้ำตาลด้วยตัวของท่านเอง ผู้อื่นเป็นเพียงผู้สนับสนุน					

ส่วนที่ 5 แบบสอบถามความคิดเห็นเกี่ยวกับการได้รับแรงสนับสนุนทางสังคม

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
31	ครอบครัวของท่านเอาใจใส่ดูแลท่านในการควบคุมอาหาร และการปฏิบัติตัวตามคำแนะนำของแพทย์ และเจ้าหน้าที่อย่างสม่ำเสมอ					
32	แพทย์และเจ้าหน้าที่ทางสาธารณสุขให้คำแนะนำเรื่องการควบคุมอาหารและการปฏิบัติตัวอย่างสม่ำเสมอ					
33	ครอบครัวของท่านให้คำปรึกษาเมื่อมีปัญหาและช่วยแก้ไขในการควบคุมอาหารและการปฏิบัติตัวให้เหมาะสมกับโรคอย่าสม่ำเสมอ					
34	ท่านมีโอกาสได้แลกเปลี่ยนประสบการณ์กับผู้ป่วยเบาหวานอื่นๆ					
35	ครอบครัวของท่านกระตุ้นให้ท่านดูแลตนเอง,ควบคุมอาหาร และปฏิบัติตัวตามคำแนะนำของแพทย์ และเจ้าหน้าที่อย่างสม่ำเสมอ					
36	ทุกๆ คนในชุมชนของท่านให้กำลังใจและสนับสนุนให้ท่านควบคุมระดับน้ำตาลในเลือดและดูแลตนเองตามคำแนะนำของแพทย์และเจ้าหน้าที่สาธารณสุขอย่างสม่ำเสมอ					
37	ครอบครัวของท่านกระตุ้นให้มั่นใจในการควบคุมอาหารและการดูและตนเองตามคำแนะนำของแพทย์และเจ้าหน้าที่สาธารณสุข					
38	ครอบครัวของท่านช่วยให้สบายใจคลายกังวล					
39	ครอบครัวของท่านดูแลหรือสนับสนุนเวลามาพบแพทย์ตามนัด					
40	ครอบครัวของท่านช่วยเหลือจัดหาสิ่งอำนวยความสะดวกอย่างสม่ำเสมอ					

ส่วนที่ 6 แบบสอบถามความคิดเห็นเกี่ยวกับระบบการดูแลผู้ป่วยเบาหวานของโรงพยาบาลส่งเสริมสุขภาพตำบล(รพ.สต.)

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
41	ท่านได้รับความรู้ และคำแนะนำในการปฏิบัติตัวเกี่ยวกับโรคเบาหวานจากเจ้าหน้าที่โรงพยาบาลส่งเสริมสุขภาพตำบล และ อสม.อย่างสม่ำเสมอ					
42	ท่านได้รับกำลังใจและคำปรึกษาเมื่อท่านมีปัญหาเกี่ยวกับโรคเบาหวานจากทีมแพทย์เจ้าหน้าที่ รพ.สต. และ อสม. อย่างสม่ำเสมอ					
43	ท่านได้รับการตรวจระดับน้ำตาลในเลือดทุกเดือน					
44	ท่านได้รับการเยี่ยมบ้านเป็นประจำทุกเดือนหรือมากกว่า					
45	รพ.สต.จัดกิจกรรมแลกเปลี่ยนประสบการณ์ระหว่างผู้ป่วยเบาหวานอย่างสม่ำเสมอ					
46	ครอบครัวหรือผู้ดูแลของท่านได้รับความรู้เกี่ยวกับโรคเบาหวานจากเจ้าหน้าที่สาธารณสุข					
47	ท่านและครอบครัวพร้อมทั้งเจ้าหน้าที่ร่วมปรึกษาและวางแผนการดุแลรักษาโรคของท่านอย่างสม่ำเสมอ					
48	รพ.สต.จัดกิจกรรมเกี่ยวกับโรคเบาหวานในชุมชนของท่านอย่างสม่ำเสมอ					
49	ท่านได้รับความรู้ในการสังเกตภาวะแทรกซ้อนของโรคเบาหวาน, วิธีดูแลรักษา และการป้องกันจากเจ้าหน้าที่รพ.สต.อย่างต่อเนื่อง					
50	เจ้าหน้าที่ รพ.สต. ติดตามเยี่ยมบ้านทุกครั้งเมื่อท่านไม่ไปตามนัด					

ส่วนที่ 7 แบบสอบถามความคิดเห็นเกี่ยวกับระบบการดูแลผู้ป่วยเบาหวานของ รพ.สต.แบบใหม่ (Tri–linked Model)

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
51	การจัดระบบการดูแลผู้ป่วยโรคเบาหวานของโรง พยาบาลส่งเสริมสุขภาพตำบล มีความครอบคลุมและช่วยให้ท่านมั่นใจในการดูแลตนเองมากขึ้น					
52	ท่านรู้สึกประทับใจในระบบการดูแลผู้ป่วยโรค เบาหวาน แบบใหม่ของรพ.สต.					
53	การบันทึกการรับประทานอาหารประจำวันเปรียบเทียบกับระดับน้ำตาลในเลือดทุกสัปดาห์ทำให้ท่านมีความรู้และควบคุมอาหารได้ดีกว่าเดิม					
54	ระบบการเจาะเลือดโดย อสม. เพื่อดูระดับน้ำตาลในเลือดทุกสัปดาห์ ทำให้ท่านควบคุมอาหารได้ดีขึ้น					
55	อาการต่างๆที่เกิดจากภาวะแทรกซ้อนต่างๆ ของโรคเบาหวานของท่านลดลงหรือไม่มีเลย					
56	ระบบการดูแลอย่างใกล้ชิดของ รพ.สต. โดยการเยี่ยมบ้าน และกระตุ้นเตือนทุกสัปดาห์ของ เจ้าหน้าที่ และ อสม. ทำให้ท่านมีความเชื่อมั่นและมีกำลังใจในการดูแลตนเองมากขึ้น					
57	การเยี่ยมบ้านของเจ้าหน้าที่ และ อสม. ซึ่งให้คำแนะนำ และซักถามปัญหากับท่านและญาติ ทำให้ทุกคนในครอบครัวช่วยกันดูแลท่านได้ครอบคลุมมากขึ้น					
58	การที่ รพ.สต. จัดให้ผู้ป่วยเบาหวานมีการรวมกลุ่มแลกเปลี่ยนประสบการณ์ และให้กำลังใจซึ่งกันและ กันอย่างสม่ำเสมอ ทำให้ท่านอบอุ่น ไม่รู้สึกโดดเดี่ยว					

ข้อที่	ข้อความ	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	ไม่แน่ใจ	เห็นด้วย	เห็นด้วยอย่างยิ่ง
59	ท่านสามารถควบคุมอาหาร, ออกกำลังกายและปฏิบัติตัวตามคำแนะนำของเจ้าหน้าที่สาธารณสุขได้ดีมากกว่าก่อนเข้าร่วมโปรแกรม					
60	ท่านรู้สึกพอใจที่ท่านได้รับบริการเดียวกันโดยไม่ต้องเสียเวลาและค่าจ่ายในการเดินทางไปพบแพทย์ที่โรงพยาบาลอำเภอหรือจังหวัด					

APPENDIX C

INTERVIEW FORM, ENGLISH AND THAI VERSION

แบบสัมภาษณ์
พัฒนาการของโรงพยาบาลส่งเสริมสุขภาพตำบลในการบริหารจัดการโรคเบาหวาน
กรณีศึกษากระบวนการนโยบายของจังหวัดอุบลราชธานี

กำหนดการสัมภาษณ์
เวลาที่เริ่มทำการสัมภาษณ์.....
วันที่/ เดือน/ ปี.....
สถานที่สัมภาษณ์.....
ผู้ทำการสัมภาษณ์.....
ผู้ให้การสัมภาษณ์.....

คำถามเกี่ยวกับนโยบายโรงพยาบาลส่งเสริมสุขภาพตำบล

1. หน่วยงานของท่านมีขั้นตอนในการนำนโยบายรพ.สต.สู่การปฏิบัติให้ประสบผลสำเร็จอย่างไร
2. ท่านคิดว่าปัจจัยใดบ้างที่มีผลต่อความสำเร็จ หรือล้มเหลวในการนำนโยบาย รพ.สต.สู่การปฏิบัติ โดยเฉพาะการจัดการโรคเบาหวานในชุมชนของ รพ.สต.
3. ผลการดำเนินงาน หรือการเปลี่ยนแปลงภายหลังการดำเนินการตามนโยบายรพ.สต. เป็นอย่างไร
4. ปัญหา และอุปสรรคในการดำเนินงานคืออะไร
5. ข้อเสนอแนะและสิ่งที่ต้องการการสนับสนุน
6. คุณคิดอย่างไรกับรพ.สต.ในอนาคต

In-dept interview Form

The Development of The Tambon Health Promoting Hospital:

A case study for Policy Process in Ubonratchathani Province.

Interview agenda

Date……

Time ……..

Place …….

Interviewer……

Respondent……

Questions

1. What were the process of your Province Public health office, District Public health office and CUP to perform the THPH policy implementation accomplishment?

2. In your opinion, which factors were the most influential for successful or the failure of THPH policy implementation, especially, DM management in community of THPH?

3. What were the outcomes or the changes that occured after this policy was performed?

4. Were there any barriers when this policy was performed?

5. Do you have any suggestion and support necessary for THPH policy Implementation?

6. What do you think about THPH in the future?

APPENDIX D

DAILY- SELF REPORT

ตารางบันทึกประจำวัน

ชื่อผู้ป่วย.....

วันที่	ระดับน้ำตาลในเลือด	น้ำหนัก (ก.ก.)	อาหารเช้า	อาหารเที่ยง	อาหารเย็น	หมายเหตุ

Daily self-report

Patient name……..

Date	FPG level	Weight (Kgs.)	Breakfast	Lunch	Dinner	Remark

VITA

VITA

NAME	Jurairat Srisiri
DATE OF BIRTH	20 July 1967
PLACE OF BIRTH	Muang Ubonratchathani District, Ubonratchathani Province
EDUCATION	
1990	Diploma in Nursing and Midwifeery Equivalent to Bachelor of science in Nursing, Sapprasithiprasong Ubon Nursing College.
1995	Bachelor of Public Health, Sukhothai Thammathirat Open University
2004	Master of Public Health, Sukhothai Thammathirat Open University
2013	Doctor of Public Health**,** Mahasarakham University
PLACE OF WORK	Faculty of Nursing, Roi- Et Rajabhat University 113 Moo 12 Kohkeaw Sub-district, Selapoom District, Roi-Et Province 45120
ADDRESS	240 / 3 Burapanai Road., Muang Ubonratchathani District, Ubonratchathani Province, 34000