

**ENHANCING SELF-CARE ABILITY AND QUALITY OF LIFE  
AMONG RURAL-DWELLING THAI ELDERS WITH TYPE 2  
DIABETES THROUGH A SELF-HELP GROUP:  
A PARTICIPATORY ACTION RESEARCH APPROACH**

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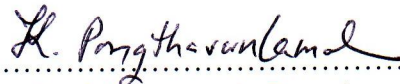
**A THESIS SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR  
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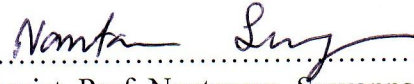
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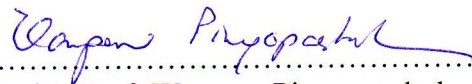
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ENHANCING SELF-CARE ABILITY AND QUALITY OF LIFE AMONG RURAL-DWELLING THAI ELDERS WITH TYPE 2 DIABETES THROUGH A SELF-HELP GROUP: A PARTICIPATORY ACTION RESEARCH APPROACH

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ABSTRACT

The purposes of this study were to investigate the impact of self-help group participation on enhancing self-care ability and quality of life, as well as to explore perceptions about experiences of group participation among rural-dwelling Thai elders with type-2 diabetes. Participatory Action Research (PAR) with an integration of both qualitative and quantitative approaches was designed for the study. Critical social theory was used as a guiding framework to emancipate the rural elders with type-2 diabetes from disadvantaged conditions for a better life. Twenty participants were purposively recruited from rural elders with type-2 diabetes living at a rural village of Ayutthaya Province to participate in the self-help group meetings offered twice a month for six months. Quantitative data assessing the participant's self-efficacy, quality of life, and blood sugar level were analyzed by paired-samples *t* test. Qualitative data from focus group discussion and observation were analyzed by content analysis.

The results revealed that after 6-month group participation, participants reported significantly increased self-efficacy and quality of life while their fasting blood sugar level significantly decreased. In addition, they perceived benefits of group participation in enhancing their self-care ability and quality of life. Culturally-sensitive knowledge and a sense of empowerment that individuals received from the group increased their self-control and power for better managing the disease. A sense of self-efficacy fostered them to conform to others for improved self-care activities. The recommendation is that the self-help group as a form of mutual aid that could offer great benefits to rural elders with type 2-diabetes should be implemented in community care setting.

KEY WORDS: SELF-CARE/ QUALITY OF LIFE/ RURAL ELDER/  
TYPE 2 DIABETES/ SELF-HELP GROUP

247 pages

การส่งเสริมความสามารถในการดูแลตนเองและคุณภาพชีวิตของผู้สูงอายุไทยในชนบทที่เป็นโรคเบาหวานชนิดที่สอง โดยกลุ่มช่วยเหลือตนเอง: การวิจัยเชิงปฏิบัติการแบบมีส่วนร่วม

ENHANCING SELF-CARE ABILITY AND QUALITY OF LIFE AMONG RURAL-DWELLING THAI ELDERS WITH TYPE 2 DIABETES THROUGH A SELF-HELP GROUP: A PARTICIPATORY ACTION RESEARCH APPROACH

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#### บทคัดย่อ

การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาผลของการมีส่วนร่วมในกลุ่มช่วยเหลือตนเองต่อการส่งเสริมความสามารถในการดูแลตนเองและคุณภาพชีวิต ตลอดจนศึกษาการรับรู้เกี่ยวกับประสบการณ์การเข้ากลุ่มช่วยเหลือตนเองของผู้สูงอายุไทยในชนบทที่เป็นโรคเบาหวานชนิดที่สอง เป็นการวิจัยเชิงปฏิบัติการแบบมีส่วนร่วมที่มีการเก็บข้อมูลทั้งเชิงคุณภาพและเชิงปริมาณ โดยใช้ทฤษฎีวิพากษ์สังคมเป็นกรอบแนวคิดที่จะเสริมพลังผู้สูงอายุในชนบทที่เป็นโรคเบาหวานชนิดที่สองให้พ้นจากสภาพค้ำอัยโอกาสที่เป็นอยู่ไปสู่สภาพชีวิตที่ดีขึ้น ทั้งนี้ผู้ร่วมวิจัย 20 คนถูกคัดเลือกแบบเฉพาะเจาะจงจากผู้สูงอายุที่เป็นโรคเบาหวานชนิดที่สองซึ่งอาศัยอยู่ที่หมู่บ้านแห่งหนึ่งในจังหวัดพระนครศรีอยุธยาเพื่อเข้าร่วมประชุมกลุ่มเดือนละสองครั้งเป็นเวลาหกเดือน วิเคราะห์ข้อมูลเชิงปริมาณจากแบบวัดความสามารถในการดูแลตนเอง แบบวัดคุณภาพชีวิตและปริมาณน้ำตาลในเลือดก่อนรับประทานอาหารเช้าด้วยสถิติวิเคราะห์ความแตกต่างแบบ paired-samples *t* test วิเคราะห์ข้อมูลเชิงคุณภาพจากการสนทนากลุ่มและการสังเกตด้วยการวิเคราะห์เนื้อหา

ผลการศึกษาพบว่าหลังเข้าร่วมกลุ่มช่วยเหลือตนเองเป็นเวลา 6 เดือน ผู้ร่วมวิจัยมีคะแนนความสามารถในการดูแลตนเองและคุณภาพชีวิตเพิ่มขึ้นอย่างมีนัยสำคัญทางสถิติและมีระดับน้ำตาลในเลือดก่อนรับประทานอาหารเช้าลดลงอย่างมีนัยสำคัญทางสถิติ นอกจากนี้ผู้ร่วมวิจัยยังรับรู้ถึงประโยชน์จากการเข้าร่วมกลุ่มช่วยเหลือตนเองว่าทำให้ความสามารถในการดูแลตนเองและคุณภาพชีวิตดีขึ้น การได้รับความรู้ที่สอดคล้องกับวัฒนธรรมท้องถิ่นและการรับรู้ว่าคุณเองมีพลังอำนาจได้ทำให้มีการควบคุมตนเองและรู้ดีกว่าตนเองมีอำนาจที่จะบริหารจัดการกับโรคเบาหวานที่เป็นอยู่ การรับรู้ว่าคุณเองมีความสามารถในการดูแลตนเองได้ผลักดันให้เกิดการปฏิบัติตามผู้อื่นเพื่อที่จะปรับพฤติกรรมดูแลตนเองให้ดีขึ้น ข้อเสนอแนะที่ได้จากผลการศึกษาคือกลุ่มช่วยเหลือตนเองในรูปแบบการช่วยเหลือซึ่งกันและกันจะเป็นประโยชน์อย่างยิ่งสำหรับผู้สูงอายุในชนบทที่เป็นโรคเบาหวานชนิดที่สอง และสมควรนำไปปฏิบัติในการดูแลสุขภาพชุมชนต่อไป

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## **CHAPTER I**

### **INTRODUCTION**

#### **Background and Significance of the Study**

Diabetes is a serious chronic disease that is a growing world-wide public health concern. The nature of diabetes and its complications harm individual health and pose an economic burden on individuals, families and countries. The global prevalence of diabetes rapidly increases each year and is projected to rise from 180 million in 2000 to 366 million by 2030 (WHO, 2006b). The most important demographic change in diabetes prevalence across the globe appears to be the increase in the proportion of elders above 65 years of age diagnosed with type 2 diabetes. The risk of mortality among persons with diabetes is double that of those without this disease. In 2005, an estimated 1.1 million people died from diabetes. Without urgent action, deaths related to diabetes will increase by more than half by 2015 (WHO, 2006b).

Diabetes is also a national health problem in Thailand and has increased in prevalence each year since 2000. In terms of the prevalence of diabetes in Southeast Asia, Thailand is expected to become one of the top four countries (WHO, 2006a). From a survey in 2000, the number of Thai people with diabetes is 2.4 million (Aekplakorn et al., 2003) and will be nearly double by 2030 (WHO, 2006h). Among those diabetic people, 99% have type 2 diabetes and it has been found that 9.6% and 18% of them are aged over 35 and 65, respectively (Himathongcum et al., 2007). Type 2 diabetes also develops in females more than males with greater prevalence of the disease in rural than urban areas (Aekplakorn et al., 2003, 2006). Diabetes is one of the top three causes of early mortality among Thai elders (Chuprapawun, 2000) where in the cause of death are diabetes-related complications (Thai Ministry of Public Health, 2006).

The complications of type 2 diabetes are caused by high blood glucose impact on physical and psychological health, economic status, social connectedness, and quality of life among elders. For impact on physical health, general world-wide data show that many elders with type 2 diabetes suffer from long-term complications such as

poor wound healing, blindness, foot disease, kidney failure, heart disease, hypertension (Finucane & Popplewell, 2002; Ho & Turtle, 2002; Sorenson & Yue, 2002; Watson, Obersteller, Rennie, & Whitbread, 2001; WHO, 2006b), and erectile dysfunction (Vinik & Richardson, 2002). Undoubtedly, these complications also affect the physical health of elders with type 2 diabetes in Thailand. Half of these individuals have hypertension, 21% develop blindness, and 3% are diagnosed with some form of heart disease (Thai Ministry of Public Health, 2006). It has been suggested that these complications are linked to the lack of ability among patients with type 2 diabetes to maintain blood glucose levels near a normal range (Keeratiyutawong, 2005; Pitayasak, 2004; Surit, 2001; Thaniwattananon, 2001; Tiampracha, 2004; Sunvijit, 2005).

In terms of psychological health, elders with type 2 diabetes have to deal with depression and are marked by suffering from uncontrolled complications (Aikins, 2004; Gilden, Hendryx, Clar, Casia, & Singh, 1992). When diagnosed with type 2 diabetes, elders often believe that they will go blind, lose limbs, and not be able to do anything to stop the disease and ultimately die of the illness (Polly, 1992). Stress and anxiety are also common in elders with type 2 diabetes caused by lifestyle changes. For example, they are obliged to consume diabetic diets instead of their habitual food (Daniulaityte, 2004).

Type 2 diabetes is a costly disease. The costs of diabetic care for patients with complications are high due to the expenses of long lengths of stay in hospital (DeCoster & George; Parsons, Wilson, & Scardigno, 2000) and diabetic management (Barton, Anderson, & Thommasen, 2005). The economic burden of type 2 diabetes for both individuals and families in Thailand is also primarily affected by the cost of hospitalization and self management. Diabetic patients in Thailand have to pay three times more for health care than healthy people (Pitayasak, 2004; Thai Public Health Plan and Policy, 1999).

For diabetes and social connectedness, an illness like type 2 diabetes has influence on social life (Hornsten, Sandstrom, & Lundman, 2004) and social relationships (Naemiratch & Manderson, 2006). A lack of understanding about diabetic regimens such as diet control causes conflict among patients' family members

and friends (Polonsky, 2000). Elders with diabetes living with a decline in functional ability caused by an amputation or blindness face a disturbed body-image and an inability to engage social activities as eventually become socially isolated (Aikins, 2004).

Having type 2 diabetes has also been found to pose a threat to patients' quality of life (Gayle, 2005). Diabetes is a costly disease in terms of loss of quality of life among patients and their families (Parsons, Wilson, & Scardigno, 2000; Thaniwattananon, 2001; WHO, 2006i). Chronic complications impair physical health and functioning in daily life (Colagiuri et al., 2003; Maddigan, Feeny, & Johnson, 2000). For example, vision loss leads to less productivity or inability to work, complete household tasks, or enjoy pleasurable activities (Polonsky, 2000). The psychological health of patients is also affected by the ongoing threat of complications which causes anxiety and depression (Aikins, 2004; Gildea et al., 1992). Additionally, social relationships with family, friends and neighbors in the community are affected by lifestyle changes; elders with type 2 diabetes have been found to avoid social engagements for fear of loss of dietary control (Polonsky, 2000).

Type 2 diabetes is a chronic disease that requires patients to perform self-care activities, such as maintaining a proper diet and weight, engaging an exercise, managing medication, performing hygiene care, and learning to cope with stress (Benzel-Lindley, 2005) while maintaining blood glucose to prevent or delay complications over the long-term (Aljaseem, Peyrot, Wissow, & Rubin, 2001; Keeratiyutawong, 2005; Pitayasak, 2004; Sunvijit, 2005; Surit, 2001; Thaniwattananon, 2001; Tiampracha, 2004). It is difficult for Thai elders with type 2 diabetes to fully engage in self-care because of their multiple self-care barriers such as low education, poverty, lack of family support, and limited access to health and continuing care services.

Many Thai elders with type 2 diabetes commonly have low formal education levels from the schooling system (Pitayasak, 2004). A national survey of Thai elders' education in 2000 reported 32% elders living in non-municipal areas (the total amount of this is 4.6 million) had no education and were not able to read or write (National Statistical Office, 2001). It was difficult for them to access health information to fully

engage in self-care activities. Tiampracha (2004) and Pitayasak (2004) found that most rural-dwelling Thai elders with type 2 diabetes had limited knowledge about their illness and could not manage their diabetes.

Poverty is another barrier wherein 90% of rural-dwelling Thai elders are poor (Ahmad & Isvilanonda, 2003) and have less pension and savings (Knodel, Chayovan, Mithranon, Amornsirisomboon, & Arunraksombat, 2005). Most of them are farmers receiving a little income from their products (Ahmad & Isvilanonda, 2003). Although they received 500 Baht per month and subsidized fees for health services, *Universal Healthcare Coverage*—the health insurance provided by the government to all Thai people with low income (Jitapunkul, Chayovan, & Kespichayawattana, 2006), 64.6 % of the elders in rural areas had average incomes of less than 2,000 Baht per month (National Statistical Office, 2001). These rural-dwelling Thai elders reported insufficient funds to purchase basic necessities for day-to-day living such as healthy food and even transportation to the primary care units in their communities (Knodel et al., 2005; National Statistical Office, 2005, 2006).

For lack of family support as a self-care barrier, Thailand family structure in recent years differs from that of the past and there are more nuclear families than extended families living together. Thai society in rural areas has changed from agriculture to industrial, with adult children having to work outside the home and leaving their elderly parents to take care of themselves (Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006). Women who are the main caregivers of elders often have to seek outside work to financially support their elderly parents, thus having less time to engage in care-giving (Keeratiyutawong, 2005; Kongin, 1998; Mongkhonsi, 2002; Wongsith & Siriboon, 1999).

In terms of limited access to health care and continuing care services, the numbers of health services are not generalized enough in rural communities (Jitapunkul et al., 2006). There is also a severe shortage of health care providers, especially physicians and nurses, in rural areas (Charoenyooth et al., 2006; Jongudomsuk, 2005; Seetamanotch, Sinchangchai, & Limchaiarunrang, 2004). This is a result of the fact that physicians and nurses have limited time to provide knowledge related to diabetic management to elders, and their instructions are mostly medically

oriented (Pitayasak, 2004; Tiampracha, 2004). Community services are not continuing care and provide only short periods of care upon request (Jitapunkul & Chayovan, 2001). As such, patients who require long-term specialty care services such as those with type 2 diabetes cannot access these services. Public transportation services and costs in rural communities are another obstacle to accessibility that reduce the ability of rural-dwelling elders to fully engage in health care support services (Jitapunkul et al., 2006).

Promotion of overall health and quality of life among older people is the main goal of policies and plans both worldwide (WHO, 2002, 2007d) and in Thailand. Given that the objectives of the 10<sup>th</sup> National Health Development Plan (2007-2011) and the 2<sup>nd</sup> National Plan for Older Persons, (2002-2021) focus on the sufficiency of health system, especially, in terms of the community care setting, both national plans aim to promote elders with chronic illnesses and their families to fully engage in self-care as suitable with their lifestyles and cultures by promoting elders to participate in the health activities arranged in their communities (Ministry of Public Health, 2009; National Health Development Plan, 2009). As for the objectives of the national plans, the main purpose of this study was to enhance self-care abilities among rural-dwelling Thai elders with type 2 diabetes with a view to improving their quality of life.

With respect to the objectives of national policies that include promoting participation in health activities in communities among elders, self-help groups as a form of mutual aid offer much benefit to elders with type 2 diabetes to improve their self-care ability and quality of life. Empirical studies have reported multifaceted benefits of self-help groups on improving of self-care ability and quality of life among elders with type 2 diabetes. Self-help groups can promote both self-care behaviors (Assuk, 2001; Lertprapai, 1996) and quality of life (Chyun, 2006; Gilden et al., 1992; Kotani & Sakane, 2004). Self-help groups are voluntary for people in similar situations who come together to overcome a common problem, and further bring about desired social and/or personal changes (Nayar, Kyobutungi, & Razum, 2004; Scholten, 2006). Elders can learn how to manage diabetes from the information shared in the group (Wituk, Shepherd, Slavich, Warren, & Meissen, 2000). Good quality of life for older adults includes social relationships with friends, neighbors and voluntary

activities (Kim & Moen, 2002; Walker, 2005b). The researcher believes that better quality of life of elders can come from having personal relationships with friends and participating in social activities such as a self-help group. Emotional and social support received from self-help group participation has been found to reduce stress, anxiety, depression, and feelings of isolation (Gamsu, Sutton, Bennett, & Ward, 2002; Maxwell, Hunt, & Bush, 1992).

In Thailand, the use of self-help groups among elders with type 2 diabetes had been only confined to hospital settings and both the goals and activities of patients were defined by researchers (Assuk, 2001; Lertprapai, 1996). The existing empirical studies had limitations including its used of quasi-experimental methods and the lack of patients' perspective on improving health outcomes. The lack of suitability with cultural values, practices, beliefs, and unique life conditions between researchers and participants would contribute, in part, to a lack of program effectiveness in maintaining self-care ability and quality of life over the long term (Sringunyang, 2002). Participatory action research is a collaborative research method wherein researchers and participants can collaborate to better understand and explore constraints that affect their life circumstances and to brainstorm about ways to overcome such constraints for further positive changes (Denzin & Lincoln, 2000; Speziale & Carpenter, 2003). Participatory action research as a method provides tremendous value on empowerment (Cornwall & Jewkes, 1995; Lewin, 1946). This would occur through increasing confidence to use knowledge among rural-dwelling Thai elders with type 2 diabetes to improve self-care ability and quality of life in the situation of confronting self-care barriers. The knowledge derived from brainstorming among them may suit their life conditions and better improve their self-care ability and quality of life in the long run. As such, this study was conducted using the participatory action research method through a self-help group process in order to enhance self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes.

### **Research Questions**

1. Does participating in a self-help group affect the self-care ability of rural-dwelling Thai elders with type 2 diabetes?

2. Does participating in a self-help group affect the fasting blood sugar levels of rural-dwelling Thai elders with type 2 diabetes?
3. Does participating in a self-help group affect the quality of life of rural-dwelling Thai elders with type 2 diabetes?
4. What are the perceptions of rural-dwelling Thai elders with type 2 diabetes about their experiences of participating in a self-help group in relation to their self-care ability and quality of life?

### **Purposes of the Study**

1. To investigate the impact of self-help group participation on self-care ability among rural-dwelling Thai elders with type 2 diabetes.
2. To investigate the impact of self-help group participation on fasting blood sugar levels among rural-dwelling Thai elders with type 2 diabetes.
3. To investigate the impact of self-help group participation on quality of life among rural-dwelling Thai elders with type 2 diabetes.
4. To explore perceptions of rural-dwelling Thai elders with type 2 diabetes about their experiences of participating in the self-help group in relation to their self-care ability and quality of life.

### **Conceptual Framework**

Critical social theory was used as the guiding framework of this research as it seeks to emancipate deprived people from disadvantaged conditions so they can gain power and control in their lives to achieve positive changes (Denzin & Lincoln, 2000; Dickinson, 1999; Fontana, 2004). The disadvantaged conditions include situations that constrain individuals' ability, autonomy and responsibility (Scambler, 2002; Thorne & Hayes, 1997). The theory also defines such constraints as the value of *negative ideology* and *social inequity* in societies (Denzin & Lincoln, 2000). Under the auspices of critical social theory, rural-dwelling Thai elders with type 2 diabetes face multiple disadvantaged conditions including the impact of type 2 diabetes on health and self-care barriers such as low education, poverty, lack of family support, and limited access to health and continuing care services. The complications of type 2 diabetes render those who suffer from the disease with poor physical and psychological health, economic burden and less social connectedness. As discussed

previously, the impact of type 2 diabetes caused by its complications and the self-care barriers exceptionally induce inadequate self-care ability and pose a threat to poor quality of life among rural-dwelling Thai elders with type 2 diabetes. Such disadvantaged conditions also contribute a sense of *negative ideology* and reflect the value of *social inequity* among the rural elders.

Negative ideology refers to beliefs or thoughts that constrain individuals in terms of doing and thinking (Denzin & Lincoln, 2000). Some groups or members of societies, especially older people, are deluded by a negative or false ideology that they are powerless, disadvantaged, and lack ability; this idea constrains them from living freely according to their own interests (Dant, 2003). The aspect of social status in older age concerns the negative ideology that they no longer actively and productively contribute to society (Cheal, 2000; Johnson, 2005). Rural-dwelling Thai elders with type 2 diabetes are also deluded by a negative or false ideology that they have no ability to practice self-care themselves if their health is attacked by an incurable disease as diabetes. Health infirmities such as blindness and amputated limbs caused by the complications of type 2 diabetes and the negative ideology associated with ageing could reduce the capacity to effectively manage daily self-care tasks, make decisions and acquire new skills to develop self-care abilities and improve their quality of life.

Social inequity is the value of social isolation, dependence and loss of autonomy (McMullin & Marshall, 2001). Such values reduce participation in community activities among people in community life (Lawton, Windley, & Byert, 1982; Lin, Gao, & Pusari, 2006) and lead to marginalization in society (Minkler, 1997). Self-care barriers such as low education, poverty, lack of family support, and limited access to health and continuing care services can reflect social inequity among rural-dwelling Thai elder with type 2 diabetes. Furthermore, low education and illiteracy are associated with decreased skills and confidence to adapt and stay independent at older ages (WHO, 2002). Poor elders are more likely to experience barriers to engaging in social activities (WHO, 2007c). The lack of family support for assistance with the activities of daily living contributes to the situation of dependence and loss of autonomy among elders (Minkler, 1997). The limitation of community healthcare

services and inadequate public transportation in rural communities could decrease an opportunities to fully engage in healthcare services and other activities in the community.

Critical social theory espouses the value of *social equality* and freedom from disadvantaged conditions that limit autonomy (Scambler, 2002; Thorne & Hayes, 1997). The theory aims to emancipate or free and enlighten or educate individuals by making them aware of negative or false of ideologies (Dant, 2003). *Emancipation* releases human potential to gain the power to control one's life (Herr & Anderson, 2005). Given the assumption of critical social theory that humans have the knowledge and capacity to change their life circumstances (Dickinson, 1999; Fontana, 2004), emancipation seeks to unmask disadvantaged conditions and empower people through helping them identify their own strengths and use their knowledge (Chappell, Gee, McDonold, & Stones, 2003), persuading them to think positively and differently about themselves and their constrained situations (Dant, 2003). Elders have knowledge and ability to improve their health (Hunsley, 2005) and change their life conditions (Baltes & Baltes, 1990; Dickinson, 1999; Fontana, 2004). The researcher believes that rural-dwelling Thai elders with type 2 diabetes have the potential to improve their diabetic self-care ability and quality of life. As such, this study has sought to emancipate rural-dwelling Thai elders with type 2 diabetes by empowering them with more knowledge and confidence to manage their diabetes more independently under their disadvantaged conditions.

Participatory action research is a collaborative research method that espouses equitable partnerships between researchers and participants toward collaborative use of knowledge to identify disadvantaged conditions and the aspects of negative ideology and social inequity for further positive changes (Cornwall & Jewkes, 1995; Cousins & Earl, 1995; Denzin & Lincoln, 2000). Participatory action research espouses the value of emancipation as it helps people identify the life constraints that limit their needs and freedom (Carson & Sumara, 1997; Denzin & Lincoln, 2000; Koch & Kralik, 2006; Kurtz, 1997; Lin et al., 2006). A basic process to which most participatory action research researchers ascribe involves: (1) planning a change; (2) acting for change; (3) observing the process and consequences of the change; (4)

reflecting on these processes and consequences; and (5) revising the plan and continuing in cycle (Benton, 2005; Carson, Connors, Ripley, & Smits, 1989; Denzin & Lincoln, 2000). Participatory action research is the methodology used in this study and pertains to working with elders to assist them to identify and meet their own needs. As for the objectives of the national plans focusing on promoting self-care and quality of life among elders by strengthening communities to develop available facilities that support social participation among elders (Jitapunkul & Chayovan, 2001), a self-help group was planned in this study.

A self-help group is a supportive, educational and usually change-oriented mutual-aid group that addresses a life problem or condition shared by all members for sharing mutual support and experiences with the purpose of personal or social change (Ben-Ari, 2002); the participation and contributions of group members are voluntary (Kurtz, 1997). Self-help groups as a form of mutual aid may bolster self-care ability as they encourage older people to remain socially and mentally active through participating in community activities in their everyday lives (WHO, 2001a, 2001b, 2002). Self-help groups would provide culturally-sensitive activities as Thai elders share their knowledge and experience with other group members to help one another better manage diabetes. The knowledge gained from this exchange is likely to be sensitive to Thai beliefs and values, and reflect the contextual barriers faced by each member. There has also been a call for culturally-sensitive knowledge and collaboration between health care providers and diabetic people to identify their problems and issues related to preventing the complications of this disease (Gelding, Vijayaraghavan, Davison, & Chowdhury, 2005; Watson et al., 2001).

Thai elders live alone because their adult children work outside the home; hence, managing their diabetic treatment regimens alone can be difficult. Self-help groups as a supplementary form of social support might help Thai elders cope with their type 2 diabetes through the provision of information and material aid encouragement (Chappell et al., 2003; Gleeson-Kreig, Bernal, & Woolley, 2002; *Joining People with Diabetes*, 2006; Kotani & Sakane, 2004; South Community Health Centre, 2006; Strickland & Waltz, 1990). Self-help groups might also be empowering for the Thai elders in that they foster collective control and involvement in their diabetes (DeCoster

& George, 2005; Gamsu et al., 2002; Garrett et al., 2005; Maxwell et al., 1992; Schwartz, 2000; Vancouver Health, 2006). Elders can collectively share their knowledge and experiences with one another with a view toward helping each other better manage their diabetes more independently, thereby promoting a sense of empowerment (DeCoster & George, 2005; Kurtz, 1977).

Moreover, self-help groups can enhance self-efficacy by promoting elders' confidence to be able to carry out their diabetes-related self-care activities (DeCoster & George, 2005; Garrett et al., 2005; Gleeson-Kreig et al., 2002). Past research findings have strongly supported a positive association between self-efficacy and self-care ability among patients with type 2 diabetes (Aljaseem et al., 2001; Bernal, Woolley, Schensul, & Dickinson, 2000; Bijl, Poelgeest-Eeltink, & Shortridge-Baggett, 1999; Hurley & Shea, 1992; Rapley, Passmore, & Phillips, 2003). More specifically, self-efficacy has been found to be a significant predictor of adherence to self-care (Aljaseem et al., 2001; Bernal et al., 2000). Patients with higher levels of self-efficacy are better able to manage their diabetes self-care (Bijl et al., 1999; Hurley & Shea, 1992). Self-care is an important mechanism by which self-efficacy influences lifestyle choices such as diet and exercise (Rapley et al., 2003). Perceived self-efficacy occurs when individuals compare their attainments to those of others who are of similar status (Bandura, 1997). If individuals judge the performance of others to be superior to their own, they will raise their efforts to improve their own performance (Bandura, 1997). Similarly, if a rural-dwelling elder with type 2 diabetes sees a peer who can control his/her blood glucose well, the elder may also try to do so.

In summary, under the auspices of critical social theory, participatory action research was used as a research method by which the researcher and participants collaboratively established a self-help group for aim of emancipating rural-dwelling Thai elders with type 2 diabetes from their disadvantaged conditions that affected their quality of life and self-care ability in managing their diabetes. Attaining mutual aid through a self-help group would have the potential to empower the elders toward changed behavior to practice improved self-care. Culturally-sensitive knowledge gained from the sharing of experiences among group members is likely to assist better understanding about how to self-manage diabetes more independently. Self-help

groups as a form of social support could provide information and material aid to improve self-care behavior among elders. Self-help groups can also enhance self-efficacy among group members by promoting their confidence to engage in self-care. Doing so would have the potential of making positive changes in health outcomes among rural-dwelling Thai elders with type 2 diabetes indicated by increasing self-care ability and lowering blood glucose levels to nearly normal levels, and in turn improving their quality of life (see Figure 1.1).

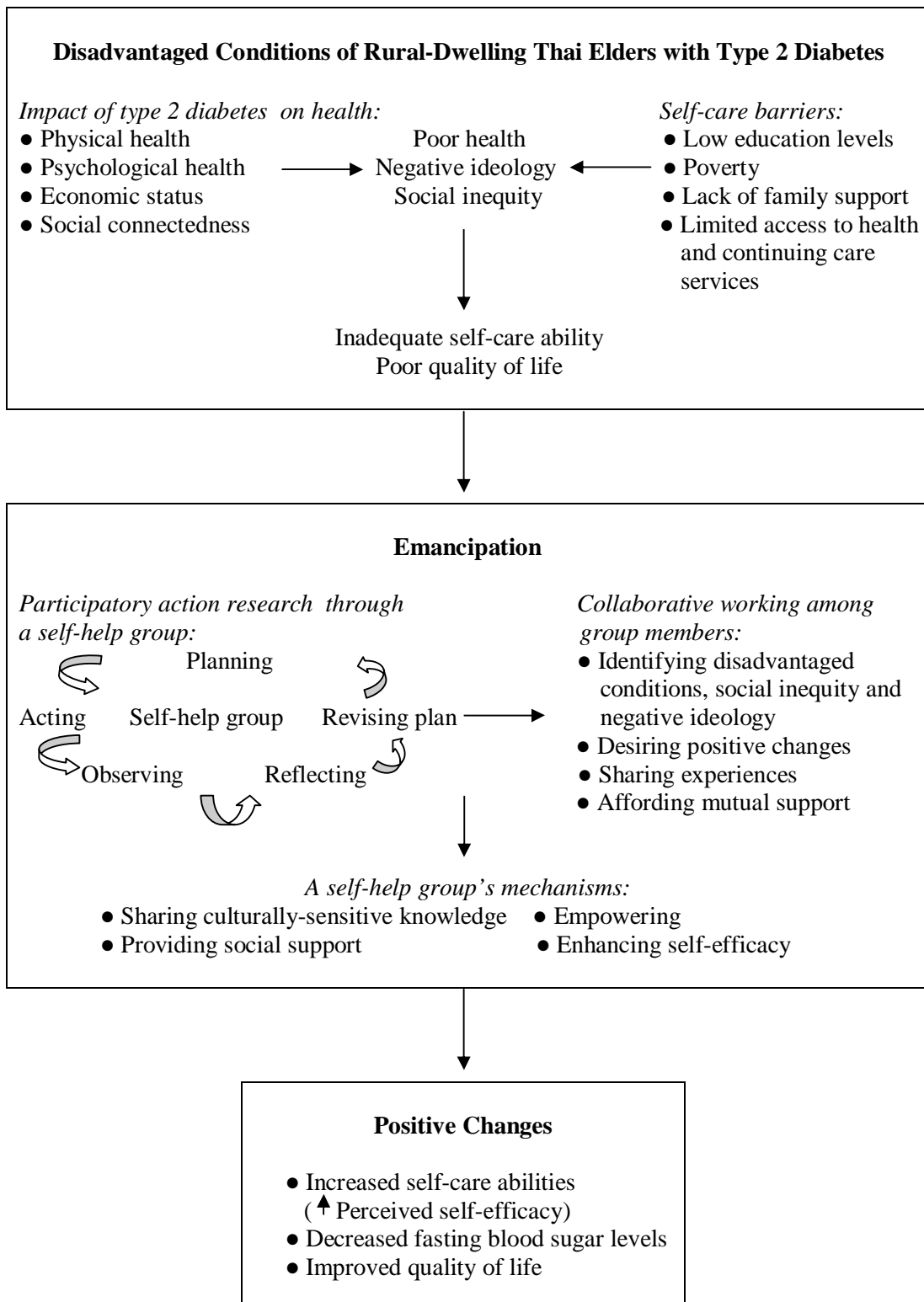


Figure 1.1 Conceptual framework of the study

## **Scope of the Study**

This participatory action research study aimed to enhance self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes through the process of a self-help group. The participants in this study were Thai male and female elders diagnosed with type 2 diabetes living in a rural village in Bang Pa Han District, Ayutthaya Province, Thailand. Data were collected for six months from July to December, 2008.

## **Definition of Terms**

**1. Self-care ability:** refers to the abilities of a participant in performing diabetic self-care activities in adherence to diabetic routines in order to control their diabetes and prevent diabetic complications. The self-care abilities of the participants in this study were assessed by perceived self-efficacy and fasting blood sugar levels. The perceived self-efficacy of the participants was measured by the Diabetes Self-efficacy Scale-Thai (DDSES-THAI), (Appendix L). Fasting blood sugars after 6-8 hours of fasting was drawn from a capillary blood vessel of the participants.

**2. Quality of life:** refers to a participant's perception of overall health, experiences and satisfaction about her/his life over the last two weeks e.g. ability to perform daily living activities, personal relationships with family and neighbors, support from family and friends, living conditions, accessibility to healthcare services, available transportation in the community, financial status and participation in community activities, etc. The quality of life of the participants was measured by the World Health Organization Quality of Life-BREF-Thai (WHOQOL-BREF-THAI), (Appendix K). The WHOQOL-BREF-THAI is the Thai version of a quality of life measurement instrument developed from the original English version of the World Health Organization Quality of Life-BREF (WHOQOL-BREF) by a research team of the Thai Ministry of Public Health (Ministry of Public Health, 2007).

**3. Rural-dwelling elders:** refers to participants living in a village in a non-municipal area of the Bang Pa Han District, Ayutthaya Province, Thailand.

**4. Self-help group:** refers to a group of rural-dwelling elders with type 2 diabetes, participants of this study, coming together to participate in the self-help group meetings offered twice a month for six months. The self-help group was

established in a rural village in the Bang Pa Han District, Ayutthaya Province, Thailand.

**5. Participatory action research (PAR):** refers to a research method the researcher used as a guidance to empower participants to use their own knowledge to take action for better changes in their health problems. For this principle, the researcher collaboratively worked with participants to establish a self-help group that was used as a place for sharing experiences and suggestions related to diabetes management.

## **CHAPTER II**

### **LITERATURE REVIEW**

In this Chapter, the literature review began with current knowledge on diabetes mellitus. Its prevalence world-wide and in Thailand, risk factors and its impact on overall health, and management of type 2 diabetes was provided. Self-care and type 2 diabetes management were clarified and self-care barriers among Thai elders in rural areas were explored. Literature was reviewed to analyze how type 2 diabetes affected both health and quality of life. The policies and plans for elderly health world-wide and in Thailand were brought forth. The guiding framework of critical social theory was used to explore how one could begin to emancipate or empower elders to work toward overcoming barriers to self-care they faced. Participatory action research serving as the method to do so was clarified. The concept and process of a self-help group and its mechanisms were explored in relation to enhancing self-care ability and quality of life. Empirical evidence about self-help groups was reviewed to illuminate practical implications for this study. The knowledge gaps about self-help group research were then elaborated upon.

#### **Background and Knowledge on Diabetes Mellitus**

Diabetes mellitus is a chronic disease of metabolic disorder (Chen, 1998; Surit, 2001; WHO, 2006a) caused by the pancreas not producing enough *insulin*—a hormone that is needed to transform glucose or sugar, starches, and other food into energy (Surit, 2001). The body also cannot effectively use the insulin it produces (Chen, 1998; Strickland & Waltz, 1990; Surit, 2001; WHO, 2006b), leading to increasing blood glucose (Chen, 1998; Gambert, 1990). Diabetes is diagnosed when the level of blood glucose is higher than normal (Diabetes UK, 2006b; Gayle, 2005). One such criterion is a hemoglobin A1c (HbA1c) > 7% and the other is a fasting blood sugar level more than 126 mg/dl or non-fasting of level more than 200 mg/dl (American Diabetes Association, 2004; Siminerio, Piatt, & Zgibor, 2005). The hemoglobin A1c and fasting blood sugar are always measured before breakfast after 6-8 hours of fasting. The hemoglobin A1c is accessed from venous blood while the

fasting blood sugar is always accessed from capillary blood. It was found that fasting blood sugar levels rapidly vary depending on kinds of current food consumption. As such, the assessment of hemoglobin A1c is more accurate because it is assessed by counting numbers of red blood cells that attached with blood glucose from food consumption in the last eight weeks (Himathongcum et al., 2007). Physical observations might also contribute to a diagnosis, these being *polyphagia* (excessive eating) and *polyuria* (excessive excretion of urine), (Surit, 2001). There are two types of diabetes: type 1 or insulin-dependent (IDDM) and type 2 or non-insulin-dependent diabetes mellitus (NIDDM), (Gambert, 1990). Type 2 diabetes is the focus of this study given that the vast majority (90%) of elders is diagnosed (Bijl et al., 1999; Diabetes UK, 2006b; WHO, 2006b).

Type 1 diabetes is characterized by a lack of insulin production from the pancreas (Bijl et al., 1999; Diabetes UK, 2006b; Gambert, 1990; WHO, 2006b) and, in general, this disorder affects persons who are younger (prior to 20 years of age) and thin (Gambert, 1990). Patients usually present with excessive excretion of urine, thirst, constant hunger, weight loss, vision changes, and fatigue (Bijl et al., 1999; Diabetes UK, 2006b; Gambert, 1990; WHO, 2006b). Subcutaneously injected insulin therapy is required to maintain a blood glucose level at or as near to normal range as possible (Gambert, 1990).

In contrast, type 2 diabetes results from an inability to make enough of or to effectively use pancreatic insulin (Surit, 2001); this is largely linked to excess body weight and physical inactivity (Gambert, 1990; Sclater, 2003) and its prevalence increases with age (Health Canada, 2001; Johnson, 2005; Parsons et al., 2000). Type 2 diabetes is most commonly diagnosed over 40 years of age (Gambert, 1990) and approximately 20% of populations worldwide will develop type 2 diabetes by age 75, in men more than in women (Sclater, 2003). Symptoms may be similar to type 1 diabetes (Bijl et al., 1999; Diabetes UK, 2006b; Gambert, 1990; WHO, 2006b). Treatment does not necessarily require insulin, particularly in the initial years following diagnosis as successful management is linked with diet and general lifestyle changes alone, or in combination with oral medication (Blood Glucose Level, 2007).

From the above information on type 1 and type 2 diabetes, the most remarkable differences between them are cause and age-related prevalence. Type 1 diabetes is a

consequence of lack of insulin and is most prevalent before age 20. Type 2 diabetes stems from ineffective use of insulin and mainly occurs in older age. The prevalence of diabetes worldwide and in Thailand is the focus. Initially, prevalence statistics was reflect type 1 diabetes and type 2 diabetes combined as these were not differentiated in the literature; however, type 2 diabetes as it relates to urban versus rural populations, gender, and age will then be reviewed.

### **Prevalence of Diabetes Mellitus**

It is important to look at the evidence pointing to rapidly increasing numbers of diabetics worldwide. The number of people with diabetes worldwide is projected to rise to 366 million by 2030 (WHO, 2006a; 2006b; Wild, Roglic, Green, Sicree, & King, 2004). The greatest increase is projected for economically developing countries, this being almost threefold, especially (approximately 230 million) among urban populations (Aekplakorn et al., 2003). The most important demographic change appears to be an increase among people over 65 years of age, this being highest in men (WHO, 2006b). In 2005, an estimated 1.1 million people died from diabetes worldwide and deaths are expected to increase by more than 50% in 2015 (WHO, 2006d); almost 80% of these occur in low and middle-income countries (Wild et al., 2004).

In developed countries such as Australia, Canada, and the UK, increasing prevalence is also a serious health problem. Australian has one of the highest prevalence rates (International Diabetes Federation, 2005). The total number of Australians with diabetes is projected to rise to 1.7 million by 2030 (WHO, 2006i, 2006f) and nearly one-third of older adults have type 2 diabetes (Colagiuri et al., 2003; Flynn, Jelinek, & Smith, 2005; McDermott, Tulip, & Sinha, 2004). Rural populations experience high prevalence rates (Bailie, Si, Robinson, Togni, & d'Abbs, 2004; Lee, McCarty, Taylor, & Keeffe, 2001; Mak, Whitehead, & Plant, 2004; Overland, Yue, & Mira, 2001), especially indigenous groups (Ewald, Patel, & Hall, 2001; Parsons et al., 2000; Watson et al., 2001; Wong, Haswell-Elkins, Tamwoy, McDermott, & d'Abbs, 2005). Diabetes is the 7<sup>th</sup> leading cause of death in Australia (Blood Glucose Level, 2007). In Canada, prevalence is projected to rise to 3.5 million by 2030 (Love, 2003; WHO, 2006g) and will be highest among those 65 years of age and older (Public Health Agency of Canada, 2001, 2006; Statistics Canada, 2006). The prevalence of

diabetes is higher in men (Statistics Canada, 2006) and in rural and indigenous populations (Mak et al., 2004). Diabetes is the 6<sup>th</sup> leading cause of death in Canada (Statistics Canada, 2006). In the UK, the prevalence of diabetes is also rapidly increasing; the total number is projected to rise to 2.7 million by 2030 (Gelding et al., 2005; WHO, 2006f). Currently, about 10% of those 65 and older have type 2 diabetes (Diabetes UK, 2006a).

Diabetes is also a major health problem in Thailand, its prevalence increasing each year as is the case with Australia, Canada, and the UK. In South-East Asia, Thailand is expected to be in the top four (WHO, 2006h). Based on a population survey in 2000, the number of Thai persons with diabetes in general was estimated at 2.4 million from the total Thai population of 63.08 million), (Aekplakorn et al., 2003), and 99% is type 2 diabetes (Himathongcum et al., 2007). The prevalence was higher among women (1.3 million) and rural-dwelling persons (1.4 million), (Aekplakorn et al., 2003, 2006). At recent, Himathongcum et al. (2007) indicated that approximately 8 in every 100 Thai people developed type 2 diabetes and its prevalence increases by age, 9.6% and 18% among persons with 35 and 65 years, respectively. As of 1999, diabetes contributes to 1.7% of all deaths (Tangcharoensathien, Faramnuayphol, Teokul, Bundhamcharoen, & Wibulpholprasert, 2006), and is one of the top three causes of early mortality among Thai elders (Chuprapawun, 2000).

Diabetes is rapidly increasing in both developed and developing countries. In comparing these, the prevalence of type 2 diabetes appears to be higher in older age and in rural areas, and where data are available, among men in developed countries such as Canada and among women in developing countries such as Thailand. Given that type 2 diabetes is a global health concern, it is imperative to have knowledge of both its risk factors and its impact in older age.

### **Risk Factors of Type 2 Diabetes**

The literature reviewed thus far linked the prevalence of type 2 diabetes with age, gender, place and country of residence, race and ethnicity, body weight and activity levels. The other major connection is unhealthy food consumption (Kosulwat, 2002), particularly in light of Westernization and urbanization occurring within the Asia and Pacific region (Kosulwat, 2002; Naemiratch & Manderson, 2006; Resnicow, 2007). China, Japan and Korea show higher trends in the incidence of obesity, hypertension,

type 2 diabetes, heart disease, and stroke; these are the result of changes in food intake patterns. Eating patterns have shifted from a traditional Asian diet that is cereal-based and low-fat to a Westernized diet characterized by an increased consumption of animal products, fats and sugars (Kosulwat, 2002). Thailand has also faced with this as its economic structure has shifted from agriculture to industry (Ahmad & Isvilanonda, 2003; Kosulwat, 2002). Both the social structure and lifestyle of Thai people has changed from a rural to an urban society, resulting in an increase of certain types of foods consumed. For example, the traditional Thai diet is rich in rice, fish, plants, and herbs; currently, these are being replaced by high fat foods including more meat, and also less vegetables and fruits. Home-made meals are also replaced by ready-to-cook and ready-to-eat foods bought from market with a view to saving time in both urban and rural areas. Some of cooked foods are unhealthy foods for people; they are rich of sugar, fat and salt. The expenditure of sugar and sweeteners has also increased; particularly in the central region of Thailand (Kosulwat, 2002).

The rapid changes in food intake patterns as a result of societal shifts has led to a higher consumption of fat and sugar, food stuffs contributing increase of prevalence of type 2 diabetes in Asia and Pacific regions. Known as a disease of burden, the impact of type 2 diabetes on elders was also explored.

### **Impact of Type 2 Diabetes**

It is important to look at the impact of type 2 diabetes because its nature and complications pose a threat to both physical and psychological health, an economic burden for individuals, families and societies, and elders' opportunities for social connection.

#### **1. Physical health**

In general, world-wide data have shown many physical health consequences of type 2 diabetes. For example, type 2 diabetes is the leading cause of blindness in older adults (Finucane & Popplewell, 2002; Gambert, 1990; Lee et al., 2001; McKenzie & Grylls, 1999); after having diabetes for 15 years, 12% become blind from accumulated damage to small blood vessels in the retina (WHO, 2006b). Type 2 diabetes is also the leading cause of kidney failure (Blood Glucose Level, 2007; Health Canada, 2001); 20% experience this complication (WHO, 2006b). Diabetic foot problems such as infection, ulceration and destruction of deep tissues associated with loss of pain

sensation and peripheral vascular disease in the lower limbs are common (Ho & Turtle, 2002; Parsons et al., 2000; Sorenson & Yue, 2002; Watson et al., 2001). Amputation, a life-threatening event evoking some degree of life-long dependence, is presently the most costly complication of type 2 diabetes (Blood Glucose Level, 2007; Young & Boulton, 2002). Up to 70% of all lower-limb amputations worldwide are related to type 2 diabetes (International Diabetes Federation, 2005) and approximately 1 in every 100 individuals with type 2 diabetes have such amputations (Blood Glucose Level, 2007).

Individuals with type 2 diabetes are at a greater risk for developing heart disease and stroke (Flynn et al., 2005; WHO, 2006b); 50% are diagnosed with these conditions compared to only 2.50% of non-diabetics (Aekplakorn et al., 2003, 2006). With over half of all deaths (65%) are due to subsequent heart disease and circulatory problems (Muggeo, Zoppini, Brun, Bonora, & Verlato, 2002). Erectile dysfunction is also common (Vinik & Richardson, 2002). Overall, type 2 diabetes increases five times of mortality risk comparing to non-diabetic persons (DeCoster & George, 2005).

Undoubtedly, Thai people are also impacted. Although national statistics do not separate out type 1 from type 2 diabetes, it has been reported that half of Thai people with type 2 diabetes report hypertension, 21% develop blindness, and 3% are diagnosed with some form of heart disease (Thai Ministry of Public Health, 2006). It has been also suggested that these complications may be linked with a lack of ability to keep blood glucose levels close to a normal range (Keeratiyutawong, 2005; Pitayasak, 2004; Surit, 2001; Thaniwattananon, 2001; Tiampracha, 2004; Sunvijit, 2005).

## **2. Psychological health**

In terms of psychological health, people who are diagnosed with type 2 diabetes have to deal with a complex regimen in order to control and manage their illness, and especially to prevent complications (Barton, Anderson, & Thommasen, 2005; Bijl et al., 1999; Butcher & Dodson, 2002; Croxson, 2002; Ho & Turtle, 2002; McAulay & Frier, 2002). The regimen complicates their daily lives and begs much adjustment (Naemiratch & Manderson, 2006). Older patients describe such regimented self-care activities are difficult in trying to adhere to a prescribed diet and exercise pattern (Barton et al., 2005; Bijl et al., 1999). Type 2 diabetes regimens present many

difficult tasks for older adults to adjust in their day-to-day lives. It is difficult for them to adjust dietary and weight control, blood glucose monitoring, foot care, medication administration, and life rules with physical exercise; to their daily activities (Polly, 1992). These demands can have a potent impact on mood, both short-term and long-term. Many elders become chronically frustrated, discouraged and angry (Daniulaityte, 2004), and fear of extended complications or feeling of hopelessness about avoiding long-term complications (Polonsky, 2000), disability and death (Aikins, 2004). Some elders suggest that being diagnosed with diabetes is stressful, painful and upsetting (Daniulaityte, 2004); they also report feeling helpless (Polonsky, 2000). In addition, chronically elevated blood glucose level that occurs with type 2 diabetic patients can lead to persistent fatigue that exacerbates depressed mood (Polonsky, 2000).

Depression is a common problem in patients with type 2 diabetes and is a mark of feeling of hopelessness with severe complications and uncontrolled diabetes (Aikins, 2004; Gilden et al., 1992). When diagnosed with diabetes, patients often believe that they will go blind, lose limbs and ultimately die of the illness, and cannot do anything to stop this (Polly, 1992). Moreover, important sources of stress and anxiety are recommended diet changes and giving up regular or habitual foods (Daniulaityte, 2004), and recommended foods are expensive (Aikins, 2003). Feelings of being alone, different from others, unsupported, and believing that no one understands what living with diabetes is really like have also been documented (Polonsky, 2000).

### **3. Economic status**

Type 2 diabetes is a costly disease, burdening individuals, families, and countries (Colagiuri et al., 2003; DeCoster & George, 2005; WHO, 2007d). It is a major threat to adults of working age in developing countries (WHO, 2006d) as it causes poverty and unemployment due to long-term severe complications (Daniulaityte, 2004). The cost of diabetic care for patients with complications is high because length of stay in hospital tends to be long, the average being 4.7 days per individual (Parsons et al., 2000). The high health care cost is often named as a barrier to carrying out type 2 diabetes regimens particularly among rural groups (Aikins, 2003, 2004; Polly, 1992). Patients' families have to pay for the expenses of diabetic management two to four times higher than those of non-diabetes (Barton et al., 2005; WHO, 2006c). It is also

of considerable financial burden on the health care sector and the government in terms of support service provision (Maddigan et al., 2004; Naemiratch & Manderson, 2006; WHO, 2006c). In Thailand, the expenses for type 2 diabetes management imposes much burden on the diabetic management and long length of stay in hospital, this is primarily due to the high cost of hospitalization (Aekplakorn et al., 2003, 2006). Diabetic patients have to pay three times more for health care than do healthy people (Pitayasak, 2004; Thai Public Health Plan and Policy, 1999).

#### **4. Social connectedness**

An illness like type 2 diabetes has some influence on social life (Hornsten et al., 2004) and social relationships (Naemiratch & Manderson, 2006). The mere presence of type 2 diabetes can affect both the quantity and quality of social relationships. Conflict may escalate among patients, their family members and friends because of a lack of understanding or worrisome about diabetic regimens of patients (Polonsky, 2000). Some groups of rural people have been highly stigmatized in their communities; those losing weight in order to control their diabetes are suspected as being a person with AIDS and soon became socially isolated as a result (Aikins, 2003). Persons living with a decline in functional ability caused by an amputation (Blood Glucose Level, 2007; Young & Boulton, 2002) or blindness (Aikins, 2003; Surit, 2001) experience a disturbed body-image and an inability to engage socially (Aikins, 2004).

In sum, the nature of type 2 diabetes and its complications clearly pose a threat to the physical, psychological, and social health and well-being of individuals. The high cost of health care poses an added economic burden to individuals, families and government. As such, it appears imperative to now focus on how to best manage type 2 diabetes.

#### **Management of Type 2 Diabetes**

The management of type 2 diabetes among elders is a challenge for all involved: patients, health care professionals, local health services, and government agencies (Reenders, 2002; Sinclair & Gadsby, 2002). Guidelines for proactive care (Turnbull & Sinclair, 2002) and long-term care for type 2 diabetes in the community are required (Mills & Harvey, 2003). Effective clinical management in rural communities is also required to counter the devastating effects of type 2 diabetes as well as reduce access

barriers to healthcare sectors (Mak et al., 2004). Educational programs are advised at an early stage (Chehade & Mooradian, 2006; Sinclair, 2000), with a view to better controlling blood glucose and preventing complications among elders (Kawakami et al., 1999; Maddigan et al., 2004; McDermott et al., 2004).

Several national programs pertaining to physical activity and healthy eating have been initiated among Thai elders with type 2 diabetes (Kosulwat, 2002). Proponents of type 2 diabetes among rural seniors argue for a holistic, multidisciplinary and culturally-sensitive approach (Health Canada, 2001; Sringunyang, 2002). Others maintain that doing so will enhance self-management of type 2 diabetes (Benzel-Lindley, 2005; Gayle, 2005; Keeratiyutawong, 2005; Pitayasak, 2004; Sunvijit, 2005; Surit, 2001; Thaniwattananon, 2001; Tiampracha, 2004). Further, enhancing self-care also requires an integral approach or one of fostering close partnerships between seniors with type 2 diabetes and their family, health service providers, and neighboring community (Wong et al., 2005).

The overall goal of diabetes programs of the WHO is to improve health through prevention, and among those who have it, either surveillance or control of its complications within low-and middle-income countries. The mission of this particular program is either to prevent diabetes or minimize its complications and maximize quality of life (WHO, 2006d). In doing so, strengthening advocacy, resource mobilization, integration and coordination of services, and national planning and policy development are the goal of the WHO's policies on strengthening active and healthy ageing (WHO, 2005). In general, management goals for patients with type 2 diabetes are to control their blood glucose level in order to prevent or delay complications, and to maintain the patient's well-being and independence (DeCoster & George, 2005; Finucane & Crotty, 2002; Ho & Turtle, 2002; Strickland & Waltz, 1990). Moreover it has been shown there is a 21% decrease in eye disease and a 33% decrease in kidney problems (Blood Glucose Level, 2007), as well as a decline in amputations (International Diabetes Federation, 2005) in patients who can control blood glucose. To control blood glucose level and prevent type 2 diabetes-related complications, self-care activities pertaining to maintaining body weight, eating a healthy diet, engaging in regular physical activity, and seeking medical care are requisite. Intensive self-management of type 2 diabetes encompasses maintaining

diabetic diet, exercising, blood glucose monitoring, seeking medical care, and preventing skin ulcers, especially those of the foot (Aikins, 2004; Chen, 1998; Diabetes UK, 2006a; Gill, Mainous, Diamond, & Lenbard, 2003; Health Canada, 2001; Parsons et al., 2000; Schwartz, 2000; Surit, 2001; White, 1999; WHO, 2002). It has been suggested that self-care is key for best managing type 2 diabetes over the long-term; hence, supporting literature on this will now be presented.

### **Self-care and Type 2 Diabetes Management**

Self-care is an activity that a person starts and independently performs to maintain health and well-being, healthful functioning, and personal development (Orem, Taylor, & Renpenning, 1995, 2001; Tomey & Alligood, 2006). Self-care is voluntary, culturally-based, and informal in origin as it is learned through socialization and influenced by personal experiences (Strickland & Waltz, 1990). The individual's capacity to perform self-care is influenced by multiple factors including age, gender, health beliefs, habits, life experiences and conditions, health and economic status, environment, cultural orientations, health care system, and available resources for self-care activities (Orem et al., 1995). Hence, individuals' self-care practices are shaped by demographic, psychological, social, cultural, and environmental factors (Aikins, 2004).

Self-care agency is an ability of persons to perform self-care (Orem et al., 1995). Individuals' self-care agency varies with health state, having education, life experiences, cultural influences, and use of resources to engage in self-care (Orem et al., 1995, 2001). Determining the adequacy of *self-care agency* is essential to diagnosing the abilities of an individual to engage in self-care (Orem et al., 1995). Persons who engage in self-care have *requisite action capabilities*—the agency or “power to act deliberately to regulate internal and external factors that affect their own functioning and development” (Orem et al., 1995, p. 103). Orem has identified three categories of self-care requisites: universal, developmental and health deviation self-care requisites (Orem et al., 1995, 2001; Strickland & Dilorio, 2003; Tomey & Alligood, 2006). Universal self-care requisites include maintaining sufficient intakes for life such as air, water, food, rest, social interaction, and well-being. Developmental self-care requisites include adapting to or coping with or experiencing life situations such as marriage and job loss. Health deviation self-care requisites exist

for persons who are ill, disabled and under medical care (Orem et al., 1995, 2001; Strickland & Dilorio, 2003; Tomey & Alligood, 2006). After a diagnosis of type 2 diabetes, for example, elders need accept their illness, seek medical care and manage diabetic regimens.

Self-care deficit occur when individuals are unable to meet their self-care requisites, either partially or completely (Strickland & Dilorio, 2003; Strickland & Waltz, 1990). Self-care demands exceed the individual's ability to engage in self-care, resulting in the need for partial or total assistance from health professionals and/or family (Strickland & Dilorio, 2003; Strickland & Waltz, 1990). Self-care limitations can arise from restricted knowledge, decision making, and resources; the two former factors often stem from impaired perception and memory, and the latter from limited resources including a lack of social support and financial hardship (Orem et al., 2001).

Self-care is a key component in managing type 2 diabetes and has the capacity to foster health and well-being in the long term (Aljasem et al., 2001; Wilson & Mayor, 2006). Self-care empowers individuals and decreases their need for professional healthcare services (Wilson & Mayor, 2006). Type 2 diabetes is not merely a disease for which people receive treatment in a medical setting; patients are responsible for managing type 2 diabetes on a daily basis within the context of their home and community (Shaw, Gallant, Riley-Jacome, & Spokane, 2006). Optimum management of type 2 diabetes depends upon day-to-day self-management through following a prescribed treatment regimen (Polly, 1992). Type 2 diabetes complications can be prevented or minimized when elders routinely engage in self-care activities such as maintaining a healthy diet and weight, exercising regularly, monitoring blood glucose, managing medication, performing hygiene and foot care, and learning to cope with stress (Benzel-Lindley, 2005; Polly, 1992; Shaw et al., 2006; Strickland & Waltz, 1990; Surit, 2001; Wilson & Mayor, 2006).

Self-care among elders with type 2 diabetes can be a challenge due to declines in physical function in particular (Surit, 2001; Wong et al., 2005). Limitations in physical mobility, vision, hearing, and taste sensitivity diminish the elders' capacity for self-care (Angus, Kontos, Dyck, McKeever, & Poland, 2005; Strickland & Waltz, 1990). Diabetes regimens require a number of behavioral changes that impact almost every aspect of life (Wong et al., 2005). These can be particularly difficult for elders

living in remote areas as they lack access to health services and knowledge of what to do to successfully manage their diabetes (Wong et al., 2005; Pitayasak, 2004; Tiampracha, 2004).

Self-care is an activity that a person independently performs to maintain health and well-being, healthful functioning, and personal development (Orem et al., 1995, 2001). Given that type 2 diabetes is a chronic disease, self-care can be considered a major contributor to its management over the long term; however, Thai elders with type 2 diabetes face numerous barriers to fully engaging in self-care, particularly those living in rural areas, as will now be explored.

### **Self-care Barriers among Rural-dwelling Thai Elders with Type 2 Diabetes**

Many Thai elders living with type 2 diabetes in rural areas commonly experience low education, poverty, lack of family support, and limited access to health and long-term care services, these being barriers to self-care (Assuk, 2001; Charoenyooth et al., 2006; Jitapunkul et al., 2006; Jongudomsuk, 2005; Keeratiyutawong, 2005; Mongkhonsi, 2002; National Statistical Office, 2005, 2006; Pitayasak, 2004; Seetamanotch et al., 2004; Siviroj, 2000; Sorngai, 1999; Wongsith & Siriboon, 1999). Each of these barriers will now be explored.

#### **1. Low education levels**

Education in early life combined with opportunities for lifelong learning can help people develop the skills and confidence they need to adapt and stay independent as they grow older (WHO, 2002). Higher levels of education are associated with better health, healthier life styles, and better access to health care and information (WHO, 1999). Knowledge and behavioral skills are necessary for optimal self-care (International Diabetes Federation, 1999). As such, more education levels might enable elders with type 2 diabetes to better understand and know the importance of self-care regimens (Aikins, 2004; Polly, 1992). Greater education has been correlated with more frequent blood glucose testing because it facilitates understanding of how to do it and what it means (Aljaseem et al., 2001). Low levels of education and illiteracy are associated with an increased risk for disability and death among people as they age (WHO, 2002). Poor knowledge of chronic conditions and their management preclude compliance with self-care regimens (Aikins, 2004). The national survey in 2000 reported 32% of Thai elders living in non-municipal areas (the total amount is 4.6

million) did not have education of formal schooling and cannot read and write (National Statistical Office, 2001), and this prevalence is higher among elders in rural areas (Ahmad & Isvilanonda, 2003; Knodel et al., 2005). The elders with education, 57.7%, typically have four years of primary level schooling (National Statistical Office, 2001). Tiampracha (2004) and Pitayasak (2004) found most Thai elders with type 2 diabetes in a rural community had inadequate knowledge about their illness and, as a result, could not independently manage their diabetes. Hence, illiteracy can be a barrier to self-care among Thai elders with type 2 diabetes, particularly those living in rural communities.

## **2. Poverty**

Rural poverty is considered to be a serious problem (Ahmad & Isvilanonda, 2003). Among rural elders, 90% are poor (Ahmad & Isvilanonda, 2003). Most the elders are farmers and have less the pensions and savings (Knodel et al., 2005). The national survey of Thai elders in 2000 reported 64.6% elders living in non-municipal areas have average income lower than 2,000 Baht per month (National Statistical Office, 2001). Even though those elders are supported by the government 500 Baht per month, one third among those report this to be insufficient for the expenses of necessary utilities in day-to-day living (National Statistical Office, 2005). As a result, a large number of rural elders (80%) rely heavily on financial support from their adult children for essential things like follow up health services, healthy food, clothing, shelter, and transportation to health care centers in their community (Knodel et al., 2005; National Statistical Office, 2005, 2006). The Thai government is currently trying to implement a universal health insurance under which all individuals will receive most medical and health services. The scheme has just started; however, it is not targeted towards elders per se (Jitapunkul et al., 2006; Sritanyarat et al., 2004). This is a key finding because affording necessary supplies prescribed to elders as part of their diabetic treatment regimen is facilitated by available income (Polly, 1992). Higher income persons are better able to afford blood testing equipment and supplies for blood glucose monitoring (Aljaseem et al., 2001). As such, poverty could be yet another barrier to self-care among Thai rural-dwelling elders with type 2 diabetes.

### **3. Lack of family support**

In Thailand, families, and in particular adult children, play a major role in providing emotional, financial (71%) and material support (food 52% and clothes 49%), as well as personal care for elders during illness or frailty (Knodel et al., 2005; National Statistical Office, 2006). However, the average family size is expected to drop to 3 persons in 2020 and with this, the number of adult children available to provide support is declining (National Statistical Office, 2006). Expansion of the Thai industrial sector has resulted in greater migration of labor forces from rural areas; with many adult children migrating to cities to seek jobs in the industrial sector (Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006; WHO, 2002). The rural-to-urban migrants will rise to 38% by 2020; with most migrants moving to Bangkok and its surrounding area (National Statistical Office, 2006). Women who are the main caregivers of families often have to seek outside work to financially support their family, thus having less time to engage in caregiving their older parents (Keeratiyutawong, 2005; Kongin, 1998; Mongkhonsi, 2002; Wongsith & Siriboon, 1999).

Decreasing numbers of family members caring for rural-dwelling elders has also resulted in family deterioration. That is, the family structure has changed from one of extended to nuclear in nature (Ahmad & Isvilanonda, 2003; Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006; Kosulwat, 2002). Also, 51% of elders report being abandoned or living alone (National Statistical Office, 2005). Living alone can result in fewer interpersonal interactions, a feeling of loneliness and greater potential for health crises (National Statistical Office, 2006). One survey of rural-dwelling Thai elders living alone found that 25% reported that they were lonely, 14% had no one to take care of them, 12% reported having no assistance with activities of daily living, and 8% spoke of financial problems (National Statistical Office, 2006).

### **4. Limited access to health and continuing care services**

Evaluations of health and social services indicate Thailand as a nation is unable to cope with its aging population. More specifically services are oriented to acute care needs alone; however, elders need both acute and long-term care services (Sritanyarat et al., 2004). While the number of older persons who need continuing care services is increasing, home and community care services are lacking (Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006) and neither meet the standard of quality care (Sritanyarat

et al., 2004). Most available community services are not long-term and provide only 'on request' care in nearby areas for short periods (Jitapunkul & Chayovan, 2001). Home care services exist in few areas and those that do lack training standards for their employees (Sritanyarat et al., 2004). Day-care centers that provide medical screening and treatment limit their services to older persons living within a distance of five to ten kilometers (Jitapunkul & Chayovan, 2001). Even community-based social service centers for older persons in particular are not successful because the services offered do not suit the needs of the elder's community and suffer from an overall lack of financial support (Jitapunkul et al., 2006). Primary care system partially concerned with home visitation programs via nurses are provided only for a limited period of time (Jitapunkul & Chayovan, 2001). At this extent, Yaiwong (2003) found the reasons of this ineffectiveness was the limited time and experiences among the nurses in primary care units.

In terms of access to healthcare services in rural areas, the number of primary care center are not generalized enough in rural areas and there is a severe shortage of healthcare providers (Charoenyooth et al., 2006; Seetamanotch et al., 2004), especially in the public sector (Jongudomsuk, 2005). Thailand has faced an economic crisis since 1997 and with this, the proportion of doctors particularly in rural areas, has dropped rapidly and been met with a steady rise in the private sector. The salary for doctors in public hospitals is very low; in particular, it is four to ten times lower than that offered by private hospitals. In 1997 alone, 21 community hospitals in rural areas had no access to doctors (Jongudomsuk, 2005). Others health professionals such as nurses, dieticians and laboratory technicians are also in great demand (Knodel et al., 2005); this is also likely due to budgetary constraints in rural areas (Jongudomsuk, 2005).

Rural residents also experience limited access to specialty care for chronic disease as diabetes. Most primary care centers have no follow-up system for patients who miss an appointment of a diabetic clinic (Sringunyung, Pimonpan, Pradubmuk, & Klumthanom, 1992). Physicians and nurses at health centers have limited time to educate patients with diabetes, and health services are mostly medically oriented (Pitayasak, 2004; Tiampracha, 2004). In rural settings, patients with diabetes receive less education and fewer eye exams in actions and blood glucose measurements than

those in urban areas; this is problematic for elders with type 2 diabetes having poor blood glucose control (Knodel et al., 2005). Public transportation services and costs are another obstacle to accessibility. Health care delivery and mobile healthcare services are lacking in rural areas, and accessible and affordable public transportation is inadequate (Jitapunkul & Chayovan, 2001). This reduces the ability of older adults to fully engage with health care support services (Jitapunkul et al., 2006). Inequities in Thai society also limit accessibility to healthcare services. Older people, particularly those who are poor, cannot obtain high-cost technologies (Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006). For example, poor elders with kidney failure caused by type 2 diabetes do not receive dialysis under a universal healthcare coverage scheme; insured civil servants or state enterprise employees, in contrast, are entitled to such services (Jitapunkul & Chayovan, 2001).

In rural areas multiple barriers to self-care influence Thai elders with type 2 diabetes. These include low education, poverty, lack of family support, and limited access to health and continuing care services. As stated earlier, difficulties in engaging fully in self-care contribute to poor blood sugar control and an increased risk of complications. The nature of type 2 diabetes and its complications pose a threat to physical and psychological health, economic security, and degree of social connectedness between individuals and their families. It also seems reasonable to infer that having type 2 diabetes in older age can, quite possibly, have a negative impact on perceptions of overall health and quality of life.

### **Health and Quality of Life**

One widely accepted definition of health is that “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 2002, p. 12, 2006e, p. 1, 2007g, p. 1). Health can also be considered physical, psychological, emotional and spiritual stability, and health and illness can coincide (Aikins, 2003, 2004). Good health is considered a basic right of all Thai citizens (Jongudomsuk, 2005) and an indicator of good quality of life (WHO, 2007a) because good health is vital to maintaining well-being and fulfilling individuals’ life (WHO, 1999). Freedom from disability is also a key to having ability to function independently, and contribute to ones’ family and society (WHO, 2004a). The maintenance of health and functioning changes as one ages (Andrews &

Sidorenko, 2000). Yet type 2 diabetes has a profound impact on the physical and psychological health and the social well-being of elders as it is the leading cause of blindness (Finucane & Popplewell, 2002; Gambert, 1990; Lee et al., 2001; McKenzie & Grylls, 1999), depression (Polonsky, 2000), and social isolation (Aikins, 2004).

Quality of life is viewed as an individual's subjective perception of well-being (Bowling, 1997; Lassey & Lassey, 2001; Mesbah, Cole, & Lee, 2002; Polonsky, 2000; Rubin, 2000); as such, individuals have their own definition or interpretation of what a good quality of life means to them (Hilderley, 2001; WHO, 2007b). Quality of life can be defined as the sense of life satisfaction within domains of life considered important to the individual (Bowling, 1997; Low, 2006), or the provision of the necessary conditions for happiness and satisfaction (Bond & Corner, 2004). The literature in quality of life covers a range of four domains: (1) physical health, i.e. activities of daily living, dependence on medical substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity; (2) psychological, i.e. bodily image and appearance, negative and positive feelings, self-esteem, spiritual/religion/personal beliefs, and thinking, learning, memory and concentration, and a sense of control over one's life; (3) social relationships, i.e. personal relationships, social support, sexual activity, social acceptance, and participation in social activities; and (4) environment, i.e. financial resources, freedom, physical safety and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic/climate), and transport (Bond & Corner, 2004; Bowling, 1997; Hilderley, 2001; WHO, 2007a, 2007b, 2007e).

Quality of life is an individual experience that, for older people, will be influenced by their own general expectations and perceptions of older age, and of living with ill health or disability (Bond & Corner, 2004). Its key components include social relationships with family, friends, and neighbors, social and voluntary activities, good health and functional ability, living in a good home and neighborhood, psychological and economic well-being, and autonomy (Kim & Moen, 2002; Walker, 2005b). Having access to facilities such as public transport and negotiating physical terrain in one's area of residence, participating cultural and religious preference (Bond &

Corner, 2004), having feelings of belonging, intimacy and safety (Low, 2006) and receiving positive social support (Chappell, 2005) are also important. It has also been argued that older adults primarily hope for positive life satisfaction over their final years (Baltes & Baltes, 1990; Chappell, 2005); this is enhanced by physical well-being, functional ability and mental health (Bond & Corner, 2004).

Though quality of life is a broad concept and there is no consensus over its definition (Bowling, 1997), common to these views, the WHO offers a comprehensive and widely adopted definition that speaks to areas of impact from type 2 diabetes as it relates to health and well-being of elders. Here, quality of life is defined as individuals' perceptions of their position in life in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards and concerns. Quality of life is "a broad concept that is incorporating in a complex way the person's physical health, psychological state, level of independence, social relationships and personal beliefs, and relationship to salient features in the environment" (WHO, 2002, p. 13, 2007a, p. 1, 2007b, p. 1). This definition reflects the view that quality of life refers to a subjective evaluation which is embedded in a cultural, social and environment context. Because this definition of quality of life focuses upon respondents' *perceived* quality of life, it is not expected to provide a means of measuring in any detailed symptoms, diseases or conditions, but rather the effects of disease on quality of life. As such, quality of life cannot be equated simply with the terms *health status*, *life style*, *life satisfaction*, *mental state* or *well-being* (WHO, 2007e). With respect to the evaluation of care provided to chronically ill patients, where diseases such as type 2 diabetes and its cooperating therapeutic strategies lead to burden in the lives of patients and their families, quality of life assessments have both meaning and merit (Bott, Muhlhauser, Overmann, & Berger, 1998; Boyer & Earp, 1997; Burroughs, Desikan, Waterman, Gilin, & McGill, 2004; Jacobson, Barofsky, Cleary, & Rand, 1988; Parsons et al., 2000; Polonsky, 2000; Sabik, 2002).

### **Type 2 Diabetes and Quality of Life**

Turning our attention to type 2 diabetes in particular, diabetes is a costly disease in terms of loss of life and quality of life (Gayle, 2005; Parsons et al., 2000; Thaniwattananon, 2001; WHO, 2006i) among people and their families (Grady,

Simmons, Tupe, & Hewlett, 2001). Indeed, several studies report type 2 diabetes has a negative effect on quality of life (Christel, 2003; Gayle, 2003; Keawe'aimoku, 2003; LaRose, 2001; Michele, 2001; Mukesh, 2006; Murali, 2005; Vinik & Zhang, 2007; Wattana, Srisuphan, Pothiban, & Upchurch, 2007). Type 2 diabetes is very much a demanding disease, in light of its daily treatment and self-management demand, and the ongoing threatening complications (Bott et al., 1998; Maddigan et al., 2000). Persons with type 2 diabetes report the demands of this disease essentially affect their quality of life (Rubin, 2000). Chronic complications impair physical functioning in daily life (Aikins, 2003, 2004; Colagiuri et al., 2003; Maddigan et al., 2000). For example, vision loss or kidney damage leads to a less productivity or an inability to work, complete household tasks, or enjoy pleasurable activities (Polonsky, 2000). In terms of emotional impact, the ongoing threat of complications is worrisome and depressing (Aikins, 2004; Gildea et al., 1992; Maddigan et al., 2000; Polonsky, 2000). Additionally, social relationships may be affected by lifestyle changes; persons with type 2 diabetes have been found to avoid social engagements for fear of loss of dietary control (Polonsky, 2000).

Therefore, it seems reasonable that type 2 diabetes has an impact upon quality of life, particularly rural-dwelling Thai elders with type 2 diabetes who have multiple limitations of education, financial and family support and healthcare services. This aspect is important in the context of policies and plans both worldwide and in Thailand, aiming to improve health and quality of life among the ageing population. Given the nature of the broad range impact of type 2 diabetes on elders, this is of particular importance.

### **Policies and Plans for Elderly Health**

Today, worldwide, there are 600 million persons aged 60 and over; this is likely to double by 2025 (Northcott, 2005; The Daily, 2004; WHO, 2004a). Indeed rapid population growth of the aged speaks to a need for public policies and support programs focusing on the promotion of health and well-being among older people. Health promotion in older age is linked with positive quality of life (WHO, 2007a). Some of the issues to be discussed include the WHO Active Ageing Framework and Policy and the Bangkok Charter for Health Promotion. The 10<sup>th</sup> National Health

Development Plan and the 2<sup>nd</sup> National Plan for Older Persons from Thailand will be introduced later.

### **1. Active ageing framework and policy**

In 1990, the WHO focused on the notable objective of continuing opportunities for health and in response, developed a position statement on participation and security in older age. More specifically, the notion of *active ageing* defined by the WHO arose an approach that “allows people to realize their potential for physical, social, and mental well-being throughout the life course and to participate in society according to their needs, desires and capacities, while providing them with adequate protection, security and care when they require assistance” (WHO, 2002, p. 12). The word *active* refers to participating in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active (WHO, 2001a, 2001b). Hence, older people who retire from work, are ill, or have disabilities can remain active contributors to their families and nations (WHO, 2002). Active Ageing Framework has as its aim to extend life expectancy and quality of life, and maintain *autonomy* (an ability to control, cope, and make decisions about one’s life) and *independence* (an ability to perform functions in daily living without help from others) for all older people (WHO, 2005).

Active Ageing Policy provides a guiding framework for programs aimed at preventing and reducing risk factors associated with chronic diseases (WHO, 2002) and caregiver training (WHO, 2005). Programs for preventing and reducing risk factors of diseases have focused on encouraging older people to have support groups in their communities such as self-help and neighborhood visiting groups. Others pertain to physical activity and the promotion of healthy eating, including programs for encouraging older people to build self-efficacy with problem-solving and coping skills (WHO, 2002). Caregiver training programs combine with programs that provide information and training to family members on how to care for older people, and often promote traditional remedies (WHO, 2005). Additionally, active ageing programs highlight the importance of adopting community-based approaches by respecting cultural contexts and influences, and strengthening intergenerational ties (Keller, Makipaa, Kalenscher, & Kalache, 2002).

## **2. The Bangkok Charter for Health Promotion**

The Bangkok Charter for Health Promotion (BCHP), a document of the WHO, affirms policies to empower communities and to improve both health and health equity (WHO, 2007d). Good health is considered a fundamental right of every human being and a determinant of quality of life (WHO, 2007a, 2007d). Health promotion is the process of enabling people to increase control over and improve their health. The commitment to reduce societal poverty and promote active participation is a value inherent in health promotion. Examples of health promoting programs might include providing leadership to various stakeholders to help develop policies and program partnerships for health promotion, encouraging local government to provide sustainable funding for health promotion, and advising government bodies about policies and health plans (WHO, 2007a, 2007d).

## **3. Policies and plans for Thai elders**

At present, the total amount of Thai elders age 60 and older is 6.8 million persons, 11% of the total amount of Thai population., and 6 million persons are in both *young old* and *old old*; age 60 to 79 (Mahidol University, 2007). *Young old* elders have age between 60-75 years old; these elders still have physical strength and are able to fully engage in day-to-day and community activities. *Old old* elders have age older than 75 years old; these elders have a weakness of body mobilizing and are less able to engage in day-to-day and community activities (Ministry of Public Health, 1998). The average age of Thai women and men are 81.5 and 79.1 years, respectively (Mahidol University, 2007). The total amount of Thai elders will be increase to 15 million persons by 2030 (Knodel et al., 2005). Rapid population ageing is likely to be a mechanism that begs national plans focusing on promoting the health and welfare of older Thai people (Jitapunkul et al., 2006; Jitapunkul & Chayovan, 2001; Knodel et al., 2005; Kosulwat, 2002; Sritanyarat et al, 2004).

### **3.1 The 10<sup>th</sup> National Health Development Plan (2007-2011)**

The 10<sup>th</sup> National Health Development Plan (NHDP) defines a vision of building a sufficiency health system based on the sufficiency economy philosophy advocated by His Majesty the King. The key principle of the sufficiency health system is that good public health comes from having a good society and using technology appropriately (National Health Development Plan, 2009). The overall objectives of

the 10<sup>th</sup> NHDP are: 1) to promote individuals, families and communities to have their healthcare culture and create happiness in societies, 2) to provide knowledge and healthcare skills to all people, particularly elders with deformity and chronically illness, 3) to develop healthcare services that fits with local knowledge and culture, and 4) to strengthen individuals to engage in self-care and health promoting activities that fit with local knowledge and culture such as self-help groups (Ministry of Public Health, 2009).

### **3.2 The 2<sup>nd</sup> National Plan for Older Persons (2002-2021)**

In Thailand, the average life expectancy for older people is expected to reach 77 years by 2025 (Keller et al., 2002). Anticipation of such increase in life expectancy increases interest in adopting the 2<sup>nd</sup> National Plan for Older Persons (NPOP). The 2<sup>nd</sup> NPOP calls for support strategies to ensure the social security and well-being of Thai elderly, the overall aims being to protect human rights and establish funds to cover expenses related to promotion and support activities of the elderly, including tax reductions for children who care for an elderly parent (Knodel et al., 2005). As such, elders have the right to security in their late life through support from family, community and government. Such securities include income, health and healthcare, home and environment, protection from abuse and neglect, safety, and having access to both information and knowledge (Jitapunkul et al, 2006). The 2<sup>nd</sup> NPOP also includes strategies on long-term care provisions for promoting and supporting informal care and self-care within the family, providing health and social services for the home and community, strengthening social participation, and developing living environments to support and fit with activities among older persons (Jitapunkul & Chayovan, 2001). However, to date, the 2<sup>nd</sup> NPOP has not yet been fully implemented in Thailand (Sritanyarat et al., 2004). Experts on the elderly agree that the success of a national policy on ageing calls for active participation and close collaboration among governmental, non-governmental, and voluntary organizations, as well as private corporations, academia, and media (Jitapunkul & Chayovan, 2001).

Policies and plans such as the Active Ageing Framework, BCHP, 10<sup>th</sup> NHDP and 2<sup>nd</sup> NPOP seek to strengthen individuals, families and communities, the overall objective being the promotion of health and quality of life, autonomy and independence (WHO, 2005, 2007c), social and healthcare security, and informal care

and self-care (Jitapunkul & Chayovan, 2001) in older age. Within these visionary perspectives, older persons are still considered valuable and potential resources very much deserving of encouragement and support to remain connected to and actively contribute to society in some way. Accordingly, one might argue that Thai elders with type 2 diabetes need not be viewed as a burden to society; rather, they have the right to live with and be engaged with their families and their community, and have a reasonably good health and quality of life as they grow older. Critical social theory, the guiding framework of this study, views individuals as being valuable, having potential, and deserving such opportunity. As such, its key tenets will now be elaborated upon.

### **Critical Social Theory and Emancipation Concept**

Since the 1920s, critical social theory as the series of ideas has been developed by the theorists at Frankfurt School, Germany, starting at Max Horkheimer, Thodor Adorno, Herbert Marcuse, Max Weber, until Jurgen Habermas in 1970 (Carr & Kemmis, 1986; Dant, 2003; Denzin & Lincoln, 2000; Scambler, 2002). Critical social theory espouses the value of social equality and freedom from oppressive conditions that limit autonomy and responsibility (Scambler, 2002; Thorne & Hayes, 1997). *Ideologies* (beliefs or thoughts) are described as determinants that constrain individuals in terms of doing and thinking (Denzin & Lincoln, 2000). Some groups or members of societies are deluded by a false ideology that they are powerless, disadvantaged, and lack ability; this idea constrains them from living freely according to their own interests (Dant, 2003). Overall, critical social theory aims to emancipate or free and enlighten or educate individuals by making them aware of false of ideologies (Dant, 2003).

Freedom is equated with making decisions and taking actions by oneself and for oneself (Crossley, 2005; Scambler, 2002) and also, enjoying living according to one's interests and abilities without constraint (Dant, 2003). *Emancipation* releases human potential to gain the power to control one's life (Denzin & Lincoln, 2000; Herr & Anderson, 2005). With respect to the assumption of critical social theory that is humans have the knowledge and capacity to change their life circumstances (Dickinson, 1999; Fontana, 2004), emancipation seeks to unmask oppression and empower people through helping them identify their own strengths and use their

knowledge (Chappell et al., 2003), and persuading them to think differently about themselves and their current situation (Dant, 2003). If people are educated about the cause of their oppression, self-awareness is fostered (Chappell et al., 2003) and active participation within society may be enhanced (Dant, 2003). Critical social theory suggests a series of moves towards betterment and from this, emancipation: to refuse, resist, reject, disagree, criticize, imagine, think otherwise, share judgments, and aspire to a good life (Dant, 2003). Critical social theory is an appropriate framework or way of thinking that helps researchers and participants make sense of oppression and discover ways to reduce oppression with a view to bringing about more equity and fairness, and opportunities to be more actively engaged in one's community (Denzin & Lincoln, 2000). From empirical research reviewed, the researcher found several studies in the field of social science used critical social theory as a framework.

### **Social Status of Elders**

The aspect of social status concerns the negative attitude of society that older adult no longer actively and productively contributes to both family and society (Cheal, 2000; Johnson, 2005; McMullin & Marshall, 2001; WHO, 1999). Negative stereotypes or images of older people revolve around physical impairments such as senility, idleness and degeneration or blemished character such as mood disorder, rigidity of thought and espousing old-fashioned values and beliefs (Bond & Corner, 2004; Clarke, Marshall, Ryff, & Rosenthal, 2000; Sneed & Whitbourne, 2005). Health problems associated with ageing may be related to hearing and vision, mobility, and memory loss and reduce the capacity to effectively manage daily tasks, make decisions and acquire new skills (Burzynski, 2003; Strickland & Dilorio, 2003; Szinovacz & Davey, 2005; Troen, 2003; Wiens, 2007). These health problems may make the elderly a vulnerable (High & Doole, 1995) and dependent (Sneed & Whitbourne, 2005) population, a group further conceived of as being frail (McDowell, Hill, & Lindsay, 2001).

Poverty, social isolation, dependence, loss of autonomy, poor education, and feminine reflect *social inequalities* in community life. Poor elders are more likely to experience barriers to engaging in social activities (Denton et al., 2004; McMullin & Marshall, 2001; WHO, 2007c). Social isolation because of health infirmities contributes to dependence and a loss of autonomy (Denton et al., 2004; Minkler,

1997). Limitation of accessible healthcare services and public transportation for older people, particularly among rural-dwelling groups, are also a sign of social isolation (Kirkham, 2003; WHO, 2002). Low education and illiteracy are associated with decreased skills and confidence to adapt and stay independent in older age (WHO, 1999, 2002). *Feminine* has unequal rights comparing to *masculine*. Ginzberg (1995) argued the difference that women and men did not deserve the same economic, legal, and political opportunities; these struggles have been occurring within some ethnic groups such as African and Native American, Jewish, lesbian, and gay. Overall, these social inequalities reduce participation in community activities (Lawton et al., 1982; Lin et al., 2006) and lead to marginalization in society (Minkler, 1997).

Social inequities are ever-present among Thai elders with type 2 diabetes, particularly those living in rural areas. Thirty-two percent of these elders have no education (National Statistical Office, 2001) and consequently have poor knowledge of how to manage illness independently, i.e. self-care (Akins, 2004). Most of these elders are also poor (Ahmad & Isvilanonda, 2003) or destitute with less income (National Statistical Office, 2001), this being a major obstacle to purchasing supplies needed to fulfill a diabetic treatment regimen (Polly, 1992). As a result of family structural changes from extended to that of nuclear, there are decreasing numbers of family members caring for rural-dwelling elders (Ahmad & Isvilanonda, 2003; Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006; Kosulwat, 2002) and given that, elders are often left alone and have no assistance with their activities of daily living including, for example, following a diabetic regimen (National Statistical Office, 2006). Inequities in Thai society also limit accessibility to healthcare services in rural areas; caused from severe shortage of primary care units and providers (Charoenyooth et al., 2006; Seetamanoth et al., 2004). These barriers are likely to inhibit rural-dwelling elders from receiving effective health services and engaging fully in self-care activities (Aikins, 2004; Orem et al., 1995, 2001; Pitayesak, 2004; Strickland & Dilorio, 2003; Strickland & Waltz, 1990; Tiampracha, 2004; Wong et al., 2005), particularly those with type 2 diabetes. The self-care barriers they faced would make a false ideology among Thai elders that they are powerless, disadvantaged, and lack ability. As a result, they are likely to be at greater risk than younger or urban Thais

with type 2 diabetes for poor blood glucose control and in the long term, complications that can pose a threat to overall health and quality of life.

With respect to social status of the elderly in terms of their generally being perceived as dependent and frail, an ageing population has much opportunity to reverse this misconception. It is argued that elders have the ability to improve their health (Hunsley, 2005) and have the knowledge and capacity to change their life circumstances (Baltes & Baltes, 1990; Dickinson, 1999; Fontana, 2004). Even though there are age-related declines in physical mobility, vision and hearing, older adults are able to offset these declines through other attributes such as caution, experience and leadership skills (Gunderson, 2003; Schellenberg, Turcotte, & Ram, 2005), formulating future goals and hopes (Moore & Hollett, 2003), their sense of coherence and resilience (Nygren et al., 2005), and pursuing creative activity (Fisher & Specht, 1999). Older people engage in some forms of creative activity in their day-to-day lives including singing, cooking, gardening, crafts, writing, organizing a group, and volunteering (Carstensen, Fung, & Charles, 2003). Older people are a human treasure and a valued resource for countries and cultures (WHO, 2000) and can be effective and productive members of society (Baltes & Smith, 2003). Identifying and removing constraints, including negative ageing stereotypes, will help enable the potential of older adults (Ranzijn, 2002).

Rural-dwelling Thai elders with type 2 diabetes are considered as valuable and potential resources to their society at their age. Their local knowledge was utilized. As such, working towards emancipating this group from barriers that render them less able to fully engage in self-care is essential. Enhancing their potential to improve self-care ability by empowering them to use their own knowledge and confidence may better enable them to independently manage their diabetes. This can be done with a view to enhancing their overall health and quality of life, each being fundamental to every human being. Under the auspices of critical social theory, participatory action research is one particular method that can be used to emancipate Thai elders with type 2 diabetes from the self-care barriers they face.

### **Participatory Action Research**

Participatory action research has been known by various names including action research, cooperative inquiry, action inquiry, community-based action research,

collaborative research, and participative inquiry (Speziale & Carpenter, 2003). Participatory action research is a social process that recognizes the importance of individuals to societies and participatory in that it engages people to work cooperatively with others and to share and utilize their knowledge and experience for their own betterment and the betterment of others (Denzin & Lincoln, 2000; Greenwood & Levin, 1998; McTaggart, 1998; Speziale & Carpenter, 2003). It is a collaborative research method that espouses equitable partnerships between researchers and participants who have ownership in and are affected by a particular problem (Cornwall & Jewkes, 1995; Cousins & Earl, 1995; Denzin & Lincoln, 2000; Israel, Schurman, & Hugentobler, 1992; Kirkpatrick, 1990; McAllister, Green, Terry, Herman, & Mulvey, 2003; Sagor, 1992; Speziale & Carpenter, 2003; Titchen, 1993; Whyte, 1991). The overall objective of participatory action research is to identify and solve social or health problems through combined knowledge and action thought to facilitate positive change (Hart & Bond, 1995; Koch & Kralik, 2006; McAllister et al., 2003; Speziale & Carpenter, 2003; Watson et al., 2001). Changes occur during the research process as a consequence of the research findings (Morse, 1997). The researcher takes a role as a facilitator and participant (Soltis-Jarrett, 1997). The participants may have little or no understanding of research per se; what is most important in the collaboration is that the researcher views and treats participants as equal partners in the process of working toward identifying and remedying problems (Speziale & Carpenter, 2003).

Participatory action research espouses the value of emancipation as it helps people identify cultural, economic and political constraints that limit their self-development and freedom (Carson & Sumara, 1997; Denzin & Lincoln, 2000; Kurtz, 1997; McKernan, 1996; Speziale & Carpenter, 2003; Tripp, 1990). It also aims to help people interpret how these constraints affect their day-to-day life circumstances (Denzin & Lincoln, 2000). Participatory action research places tremendous value on empowerment (Cornwall & Jewkes, 1995; Lewin, 1946; Lin et al., 2006; Morse, 1997; Speziale & Carpenter, 2003; Stewart, 2000). Empowerment is an outcome of the process of participants constructing and using their own knowledge to take action and seek the way to solve the problem of interest (Herr & Anderson, 2005; Koch & Kralik, 2006; Sagor, 2005; Speziale & Carpenter, 2003). Participatory action research aims to

empower and motivate participants, and to increase their self-esteem and contribute toward a sense of identify or place and belonging within their community (Borda, 1988; Denzin & Lincoln, 2000; Elliott, 1991; Koch & Kralik, 2006).

Participatory action research is one of the types of research consistent with critical social theory in that it seeks to discover the meanings of oppressive situations among participants and take action for change (Chappell et al., 2003; Fals-Borda & Rahman, 1991; Hart & Bond, 1995; Koch & Kralik, 2006; Lin et al., 2006; Morse, 1997; Soltis-Jarrett, 1997; Stewart, 2000; Thorne & Hayes, 1997). The oppressive situations reflect the value of social inequities in community life, for example, poor elders are more likely to be reduced participation in community activities than others (Lin et al., 2006). Participatory action research as a research method can be liberating, empowering, and educative (Lin et al., 2006; Lindsey & McGuinness, 1998; McLaren & Giarelli, 1995; Speziale & Carpenter, 2003) as it aims to emancipate participants from personal constraints (McTaggart, 1997). Participatory action research, as a research method, has been employed among vulnerable, marginalized, and oppressed people to explore their social or health situation and facilitate positive change at the individual and community level (Koch & Kralik, 2006; Seng, 1998).

### **Participatory Action Research Process**

Participatory action research is more an approach to research than a specific research method (Speziale & Carpenter, 2003). However, a basic process to which most participatory action research researchers ascribe involves: (1) planning a change; (2) acting for change; (3) observing the process and consequences of the change; (4) reflecting on these processes and consequences; and (5) revising the plan and continue in cycle (Benton, 2005; Carson et al., 1989; Denzin & Lincoln, 2000; Greenwood, 1999; McTaggart, 1997; Meyer, 2000; Speziale & Carpenter, 2003).

#### **1. Planning**

Planning is the initial stage of participatory action research wherein the researcher and participants identify what the problem is and desire change to solve the problem (Speziale & Carpenter, 2003). Planning needs to be carefully designed with clear strategies to monitor and evaluate the effects of the action (Speziale & Carpenter, 2003). The researcher and participants also collaboratively decide how information

will be collected, i.e. interviews, observations, focus groups, or questionnaires, and who will do the collecting.

## **2. Acting**

Acting is the process or steps taken to implement for change; action is taken by all members of the research team (Speziale & Carpenter, 2003).

## **3. Observing**

Observing is a way of data collecting on effects of the action. Observing is done simultaneously during acting and the ongoing impact things after acting is done (Speziale & Carpenter, 2003). Common methods of data collecting in a participatory action research are survey, interview, observation, and focus group (Carson et al., 1989).

## **4. Reflecting**

Reflection is a retrospective assessment of the progress that has been made in the research process. Reflecting is used as a way of gaining insights, in particular, the researcher and the participants talk about what is happening with their project (Speziale & Carpenter, 2003). The researcher and participants find the way of further improvement. In this way the reflection process has been taken after every action process (Kemmis & McTaggart, 1990).

## **5. Revising the plan**

Revising the plan based upon what the researcher and participants are learning. This is done again by engaging collaboratively in a cyclic process of planning, acting, reflecting, and observing (Carson et al., 1989). For example, the focus of discussion might concern whether the group is using the correct survey instrument, or revising the process for getting needed data or recruiting additional participants as well as whether the change implemented needs revision.

Participatory action research studies can generate both qualitative and quantitative data. The qualitative approach paints a detailed picture of a phenomenon interest (Sagor, 2005) such as how groups come together and work collaboratively and the things they are able to achieve. The quantitative approach uses a mix method approach of a controlled trial or in relation to a time series study or pre-post test design (Jirapaet, 2000), to measure whether groups affect any changes in research outcomes.

### **Participatory Action Research and Chronic Illness**

In empirical research study review, a participatory action research approach is selected to manage the care of patients with chronic conditions within the context of their families and communities. Garwick and Auger (2003) conducted a participatory action research for the purpose of sharing experiences and lessons learned about perceptions of the quality of care provided to children with chronic conditions among American Indian family caregivers. The finding was a model of care for children with chronic conditions which comprised five components of comprehensive care, community-based, family-centered, culturally competent, and coordinated (Garwick & Auger, 2003).

Nomura et al. (2007) conducted a participatory action research study to describe a cognitive rehabilitation program to empower the elderly Japanese with early dementia. The education and counseling programs are also described to empower patients' family caregivers. Results reported that the study evolved over three cycles: individual, group and community. Participants with dementia demonstrated their expert skills and regained confidence. For family caregivers, the education program provided knowledge about dementia and utilization of social resources. Face-to-face and phone counsellings were offered as need to coach problem-focused coping (Nomura et al., 2007).

In Thailand, Thaniwattananon (2001) conducted an action research project that aimed to develop a health promotion model in Thai elderly with diabetes. The model consisted of 5 strategies: 1) building relationships, 2) defining goals, 3) empowering participants with information, consultation and knowledge based on individual's need, 4) forming a self-help group, and 5) following up for blood sugar assessment. Seven elderly with diabetes participated in the study. It was found that living with diabetes had an impact on physical, psychological and social well-being of elderly. Three factors that could influence health behaviors of the elders are personal habit, family system and independent status in family. At the end of the project, participants had better health promotion behaviors and better good sugar control. The group of "Friends helping Friends" among diabetic elderly was also established.

The empirical participatory action research studies recommend for implementing the participatory action research approach in community setting to provide educational

interventions to empower skills and confidence for both community dwelling patients with chronic illness and their family caregivers. Working with the community, researchers should fit the research project to the cultural and community context (Garwick & Auger, 2003).

Participatory action research as a method provides much promise with respect to empowering and emancipating rural-dwelling Thai elders with type 2 diabetes. This may occur through increasing their confidence and using their knowledge to overcome the self-care barriers by value them as a valued resource for their community and bringing them to more participate in community activities. Most rural-dwelling elders still are active in their community activities such as taking a role as leader in religious activities and some of them are elderly group members. Doing so has the potential to increase some positive changes in their self-care ability and overall health and quality of life.

### **Self-help Groups Concept**

The utilization and benefit of self-help groups have been well documented in the literature. Self-help groups are voluntary unions of peers, formed for the purpose of affording mutual assistance in accomplishing set goals (Ben-Ari, 2002; Hellerich, 2001; Lieberman & Bliwise, 1985; Nayar et al., 2004; Scholten, 2006). Self-help groups consist of people coming together to satisfy a common need, overcome a common handicap or life-disrupting problem, and further bring about desired social and/or personal change (Ben-Ari, 2002; Dooher & Byrt, 2003; Lieberman & Bliwise, 1985; Nayar et al., 2004; Scholten, 2006). Self-help groups allow members to tackle problems and deal with crises by having somebody to listen to and exchange experiences with, or through peer contact and support (Gray, 1999; Hellerich, 2001). People in the same situation can share personal stories, express emotions and be heard in an atmosphere of acceptance, understanding, encouragement, support, and empathy (Dooher & Byrt, 2003; Finn, 1999; Scholten, 2006; Smith, 2002). Self-help groups emphasize face-to-face interactions that facilitate urgent assistance and emotional support (Nayar et al., 2004). Learning ways to cope, discovering strategies for improving one's condition, and helping others while helping oneself are also common goals of self-help groups (Wituk et al., 2000). People with a common problem, condition, situation, or experience can share and learn from one another without the

help of professionals; professional involvement is typically for the purpose of consultation (Ben-Ari, 2002; Lieberman & Bliwise, 1985). Self-help groups encourage members to support one another (Carpinello, 1995; Kaufmann, 1995; Lieberman & Bliwise, 1985; MacDonald, 2006; Wituk et al., 2000), and share experiences about difficulties (Cassidy, 1996; Finn, 1999; Gray, 1999; Wongsook, 1998) and alternative therapies (Fitch, 2000; Kongphantu, 1992; Smith, 2002).

While support groups have many characteristics like self-help groups, with both being made up of fellow sufferers (Kurtz, 1997), there are differences. Self-help groups are one form of support groups. The purpose of a self-help group is to achieve personal or societal change, with professionals rarely playing an active role in the group's activities unless they participate as a group member. In contrast, support groups have as their purpose giving emotional and informational support, and are often led by professionals (Deeprawat, 1996; Griffiths, 2003; Kurtz, 1997). The focus of this study is self-help groups per se. The WHO maintains that formal care through health and social service systems are not equally accessible to all, particularly older people who live in rural areas (WHO, 2002, 2005). Informal care provided by family members alone is inadequate to meet elders' needs (WHO, 2002). Shrinking family sizes and increased responsibilities outside of the home have led to fewer family members available to provide day-to-day support for elders when they are ill (Gleeson-Kreig et al., 2002). Even though the elders may be supported by family members, persons with such close ties may not always fully understand what chronic ill elders struggle with in their day-to-day living (Dooher & Byrt, 2003). Given that, informal care networks should be established to help older people in rural areas (WHO, 2002, 2004a, 2005, 2007c). Thus, self-help groups as voluntary unions of peers formed for the purpose of mutual assistance (Ben-Ari, 2002; Hellerich, 2001; Lieberman & Bliwise, 1985; Nayar et al., 2004; Scholten, 2006) are especially important for older persons in defining their needs and goals (Thompson & Foth, 2005).

### **Self-help Group Process**

Voluntary participation is fundamental aspect of a self-help group process (Chesler, 1991). Generally, a self-help group process comprises three phases of initial,

working and evaluate phase for running a self-help group (Kingree & Ruback, 1994; Lieberman & Snowden, 1994; Luke, Roberts, & rappaport, 1994; Marram, 1978).

### **1. Initial phase**

People with a common interest come together, to form a self-help group. Numbers of members should be three to twenty persons for effectively relationships (Marram, 1978). Basic personal information such as names, telephone numbers, occupations, and home addresses are shared. This is a friendly atmosphere of allowing members to gain acquaintance with others. Group goals, activities and meetings are identified.

### **2. Working phase**

This stage demands well organized of members for sustaining the groups. Members are let talking about common problems. Feeling of empathy during sharing experiences among members is important. This makes them better understand the problem and learn alternative ways for further problem solving. The leader motivates and guides members express opinions and members listen to and offer suggestions and ideas. Personal obstacles related to unable to join the group meetings are also be concerned. Some members face problems of transportation and meeting time. Collaborative brain storming to solve those obstacles is helpful.

### **3. Evaluated phase**

This is the time of members to evaluate how well of group working, the factors supporting and hindering and some positive changes reflecting the group achievement. Members say the benefits gained from participating in the group, suggestions to resolve problems are articulated.

## **Benefits of Self-help Groups among Elders**

The multifaceted benefits of self-help groups among older adults have been reported. Self-help groups can promote quality of life of older persons (Assuk, 2001; Chyun, 2006; Gilden et al., 1992; Kotani & Sakane, 2004; Lerttrapai, 1996; Menec, 2003; Scholten, 2006; Wong et al., 2005). Good quality of life from elders' perspectives encompasses having social relationships with friends, participating in social activities, belonging, physical and psychological well-being, and maintaining independence and control over their life (Bond & Corner, 2004; Kim & Moen, 2002; Walker, 2005a, 2005b). Self-help groups also reduce physical functional decline of

older persons (Gamsu et al., 2002; Menec, 2003). Emotional and social support derived from self-help group participation has been found to reduce stress, anxiety, depression, and feelings of isolation (Chyun, 2006; Gilden et al., 1992, Gleeson-Kreig et al., 2002; Gamsu et al., 2002; Maxwell et al., 1992; Scholten, 2006; Trozzolino, Thompson, Tansman, & Azen, 2003). Good mental health helps elders overcome negative experiences such as physical limitations and losses (Greenfield & Marks, 2004; Nygren et al., 2005). Self-help groups also promote lifelong autonomy (Cousins & Gillis, 2005; DeCoster & George, 2005; Garrett et al., 2005; Grady et al., 2001; Kuwabara, 2003). Elders may greatly benefit from the information sharing in group; they may learn how to manage symptoms, develop better coping skills, and communicate more effectively with their healthcare providers (Scholten, 2006; Schwartz, 2000; South Community Health Centre, 2006). Fostering self-help groups not only provides peer support and optimizes health outcomes in elders, these venues can also strengthen and empower older people by providing information, education, advocacy and transportation, and through fostering economic well-being through fundraising activity (Wituk et al., 2000). Self-help groups can operate nationally to maximize lobbying about health service delivery changes that could better serve their needs (Dooher & Byrt, 2003; Powell, Yeaton, Hill, & Silk, 2001; Scholten, 2006). Given that self-help groups have been found to promote health among older adults with a variety of illness including type 2 diabetes, the literature in this respect will now be presented.

Self-help groups play a large role in improving patients' health (Nayar et al., 2004; Wituk et al., 2000). Studies report positive health outcomes among patients with mental health problems such as manic depression, mood disorders and schizophrenia (Cassidy, 1996; Emerick, 1995; Hellerich, 2001; Hill, 1998; Horiuchi & Ota, 2006; Kaufmann, 1995; Leung, 2004; Liberman & Bliwise, 1985; Perron, 2002; Powell et al., 2001; Srichairattanakul, 1998; Vogel, 1998), cancer (Aimmak, 1994; Kongphantu, 1992; Pukwilai, 2002; Rasmeeleung-on, 1992), brain injuries (Man, 2004), laryngectomies (Kwok, 1998), eating disorders (Peterson, 2001), Parkinson's disease (Charlton, 2002), rheumatoid arthritis (Goff, 1999), hypertension (Powwattana, 1994; Techavanit, 2001), and HIV (Sariyaporn, Jinantuya, Pengjad, & Srisangar, 1995; Woongsook, 1998).

In terms of physical and mental health, social support in the context of self-help group has been found to improve mental well-being (Cassidy, 1996; Dungan, Brown, & Ramsey, 1996; Kaufmann, 1995; Kwok, 1998; Leung, 2004; Liberman & Bliwise, 1985; Man, 2004; Perron, 2002; Powell et al., 2001; Sariyaporn et al., 1995; Vogel, 1998), and reduce feelings of grief and sorrow (Horiuchi & Ota, 2006), stress (Kongphantu, 1992; MacDonald, 2006; Srichairattanakul, 1998), and depression (Hill, 1998; Techavanit, 2001). Self-help groups can also increase self-confidence (Adamsen, 2002), self-esteem (Dungan et al., 1996; Pukwilai, 2002) and perceived control (Cassidy, 1996; Peterson, 2001). Self-help group participation has also been shown to lead to enhanced quality of life among post-mastectomy (Aimmak, 1994) and brain injured (Man, 2004) patients. Participation in self-help groups promotes social health and well-being by reducing the sense of social isolation, social stigma (Charlton, 2002) and poverty (Dungan et al., 1996). Also, improved illness management has been reported in terms of self-help groups enhancing self-care agency (Rasmeeloung-on, 1992), problem-solving (Finn, 1999), culturally-sensitive knowledge (Leung, 2004; Resnicow, 2007; Kongphantu, 1992; Woongsook, 1998), awareness of the need for behavior change (Emerick, 1995; Hellerich, 2001; Peterson, 2001), and self-care behavior (Goff, 1999; Powwattana, 1994; Resnicow, 2007). That said, overall, the vast majority of studies focusing on mental health pertain to midlife; three focus on older adults alone (Dungan et al, 1996; Liberman & Bliwise, 1985; Techavanit, 2001).

### **Type 2 Diabetes and Self-help Groups**

Equally notable health outcomes of self-help groups show similar patterns with regard to impact upon elders with type 2 diabetes. In terms of physical and mental health, self-help groups have been found to decrease stress and depression in type 2 diabetic patients (Schwartz, 2000; Trozzolino et al., 2003). Self-help groups can increase locus of control for overweight (Gamsu et al., 2002) and self-esteem for diabetic self-management (Schwartz, 2000; Vancouver Health, 2006) and improve quality of life (Chyun, 2006; Gilden et al., 1992; Kotani & Sakane, 2004). Group sharing, solidarity, support (Joining People with Diabetes, 2006; Kotani & Sakane, 2004), and strategies devised (Diabetes UK, 2006a) have been found to be of further benefit in terms of social health that is diabetic patients can fully engage in social

activities (Kotani & Sakane, 2004). Improved type 2 diabetes management has also been reported with respect to increased family involvement (Gilden et al., 1992), in addition to improved blood glucose control, diabetes knowledge, self-management behaviors, and emotional adjustment (Gamsu et al., 2002; Gilden et al., 1992; Grady et al., 2001; Kotani & Sakane, 2004; Maxwell et al., 1992; Trozzolino et al., 2003; Wong et al., 2005).

Other benefits of improved type 2 diabetes management include increased awareness of complications (Barron, 1999) and adherence to treatment regimens (Gamsu et al., 2002; Schwartz, 2000; Vancouver Health, 2006). Moreover, self-help groups also promote self-efficacy (DeCoster & George, 2005; Garrett et al., 2005), self-care agency (Kuwabara, 2003) and enhanced self-care behaviors such as changing eating patterns to better control blood glucose levels (Assuk, 2001; DeCoster & George, 2005; Gamsu et al., 2002; Gilden et al., 1992; Lertprapai, 1996). Self-help groups also provide support and information and get participants involved in fundraising and campaigning to improve local diabetes services (Diabetes UK, 2006a). It has been argued that self-help group is not as costly as biomedical care; hence, it serves as a promising form of intervention among elders with type 2 diabetes living in their community (Aikins, 2004). Older patients also are encouraged to manage their diabetes through increasing involvement in their plan of care and developing greater decision-making capacity for managing their diabetes (Huang, Gorawara-Bhat, & Chin, 2005). Doing so has been found to improve health-enhancing behaviors, overall health-related quality of life, satisfaction with care, self-efficacy, and beliefs and attitudes about diabetes in general (Maddigan et al., 2004). Self-help groups also allowed and encouraged patients to set their own desirable goals to manage their diabetes independently (Wens, Vermeire, Royen, Sabbe, & Denekens, 2005). With respect to the purpose of this study, learning more about research related to self-help groups and support groups among diabetic patients would help illuminate practical considerations and limitations, and offer direction for the proposed study.

### **Empirical Research related to Diabetic Self-help Groups**

Twenty-two research studies on self-help groups and support groups among diabetic persons have been conducted; these span from 1992 through 2007. Among these, two were randomized control trials (Garrett et al., 2005; Gilden et al., 1992).

Eleven were quasi-experimental in design using either pre-post test or time-series measures and correlations (Assuk, 2001; Chyun, 2006; DeCoster & George, 2005; Gamsu et al., 2002; Grady et al., 2001; Kotani & Sakane, 2004; Kuwabara, 2003; Lertprapai, 1996; Maxwell et al., 1992; Schwartz, 2000; Trozzolino et al., 2003). Others involved qualitative data collection methods by using individual semi-structured and group interviews, observations and audio-tape recording (Aikins, 2004), a cross-sectional survey design (Gleeson-Kreig et al., 2002), observations of group processes (Barron, 1999; Diabetes Monitor, 2006; Vancouver Health, 2006; Wong et al., 2005), and descriptions of self-help group organizations (Diabetes UK, 2007; Joining People with Diabetes, 2006; Newell, 2007). Among these, sample size ranged from 15 to 408 participants in quantitative studies and from 20 to 95 in qualitative studies. Hence, it appears that quasi-experimental studies are most common and have as their stated purpose evaluating the effectiveness of interventions on participant health; moreover, two of these took place in Thailand.

Outcomes measurement of research studies related to self-help group among diabetic persons are multifaceted and pertain to physical, psychological and social health, and diabetic management. In terms of physical health, outcome foci include blood pressure, renal function and eyesight measurement (Grady et al., 2001). Psychological assessments include social support (Gleeson-Kreig et al., 2002), feelings of control, emotional adjustment and inhibition (Garrett et al., 2005; Maxwell et al., 1992), depression (Gilden et al., 1992; Trozzolino et al., 2003), stress (Chyun, 2006; Gilden et al., 1992), anxiety, self-esteem, body dissatisfaction, and being supported and cared for by others (Gamsu et al., 2002; Maxwell et al., 1992). Social health is assessed with social activities (Gilden et al., 1992). The most common focus is diabetic management and more specifically, self-management behaviors (DeCoster & George, 2005; Maxwell et al., 1992), diabetes knowledge (Garrett et al., 2005; Gilden et al., 1992; Maxwell et al., 1992; Trozzolino et al., 2003), serum hemoglobin A1c (HbA1c) (DeCoster & George, 2005; Gilden et al., 1992; Grady et al., 2001; Kotani & Sakane, 2004; Kuwabara, 2003; Maxwell et al., 1992; Trozzolino et al., 2003), and weight control (DeCoster & George, 2005; Grady et al., 2001). Others focus on self-efficacy (DeCoster & George, 2005; Gleeson-Kreig et al., 2002), self-care agency, resource-seeking activity (Kuwabara, 2003), quality of life, and self-care

skills (Assuk, 2001; Gilden et al., 1992; Lertprapai, 1996; Wong et al., 2005), family involvement in diabetes care (Gilden et al., 1992), diabetes experience pertaining to weight and diet control (Aikins, 2004; Trozzolino et al., 2003), and self-reported measures of adherence (Schwartz, 2000). Subjective evaluations of the beneficial effects of attending support groups are also reported (Maxwell et al., 1992). Most studies, including the two conducted in Thailand that measured quality of life and self-care skills (Assuk, 2001; Lertprapai, 1996), evaluate the effect of self-help group participation using objective measures; subjective outcomes are reported in one study alone (Maxwell et al., 1992).

### **Practical Considerations for Self-help Groups**

Eleven studies of self-help groups among diabetics provide information related to group member characteristic, process, and activities, and necessary elements for building and maintaining the self-help group. On the whole, these studies generally indicate that self-help groups are typically composed of 7 to 101 members, both males and females, whose ranges in age from 18 to 83 years, from both urban and rural-dwelling communities. Participants also have a level of education that spans from a grade 6 to a graduate degree; duration of diabetes ranges from less than 3 months to over 50 years, and most participants live with a partner or spouse.

In the early stages of group development, leaders are often persons who are interested in diabetes, including healthcare professionals, participants, media representatives, and civic or voluntary organization representatives (Diabetes Monitor, 2006; Diabetes UK, 2007; Gamsu et al., 2002; *Joining People with Diabetes*, 2006; Newell, 2007, Vancouver Health, 2006). As groups become more established (it may take as long as 2 to 18 months), leadership is sought from all members (DeCoster & George, 2005; Diabetes Monitor, 2006; Diabetes UK, 2007; Garrett et al., 2005; *Joining People with Diabetes*, 2006). Successful leaders are more likely to be a respected member of the group (Diabetes Monitor, 2006). Healthcare professionals take on the role of facilitator and assist with planning, problem-solving and resource brokering (DeCoster & George, 2005). They also provide advice (Newell, 2007).

Groups typically meet on the same day and at the same time each week (Grady et al., 2001; Vancouver Health, 2006) or month (Barron, 1999; Diabetes UK, 2007) to enhance ongoing participation; holidays are avoided (Diabetes Monitor, 2006). A

meeting place needs to be comfortable, and in this respect a community healthcare center may not be most suitable since it poses a threat to participants' privacy (Diabetes Monitor, 2006; Grady et al., 2001). Privacy is a consideration when selecting a room, along with anticipated number of members and the need for physical assessments or testing (Barron, 1999; Vancouver Health, 2006). During the initial meeting, the group's purpose, tentative plans and norms are established (DeCoster & George, 2005; Diabetes Monitor, 2006). It is important that members be active, polite, open and honest with themselves and each other, offer constructive comments, and support one another during meetings (DeCoster & George, 2005). Given that it is likely knowledge and experience of diabetes will differ among group members, it is essential that respect be shown for all members (Diabetes Monitor, 2006).

During meetings, group members share their experiences, knowledge and information with each other (Diabetes Monitor, 2006; Diabetes UK, 2007; Grady et al., 2001; *Joining People with Diabetes*, 2006). Doing so provides instrumental and emotional support and mutual aid, and contributes to collective problem-solving (DeCoster & George, 2005; Gamsu et al., 2002). At times, there are meals catered by sponsors (Barron, 1999). One to three hours is the recommended time for meetings as this has been found to provide enough time for discussion and sharing, taking a snack break, and engaging in some form of exercise (Barron, 1999; Gamsu et al., 2002; Garrett et al., 2005; Vancouver Health, 2006). Members must also be informed that self-help group meetings are not a substitute for regular medical care and that information from the group should be reviewed by their health care providers before any changes are made to their existing diabetic regimen (Diabetes Monitor, 2006).

In terms of educational presentations, the group determines the topics of interest. These are often pertaining to diet, exercise, medication, chronic complications (Barron, 1999; Diabetes UK, 2007; Gamsu et al., 2002; Vancouver Health, 2006), and stress management (Kotani & Sakane, 2004). Speakers include doctors, social workers, nurses, nutritionists, pharmacists, and psychiatrists (Barron, 1999; Gamsu et al., 2002; Vancouver Health, 2006). These informal presentations are supported with visual handouts, slide projections, posters, and demonstrations (Barron, 1999), along with pamphlets (Vancouver Health, 2006) and evaluation sheets (Gamsu et al., 2002; Vancouver Health, 2006).

To promote group involvement, it has been found beneficial to ask members to recruit at least one new participant, with a reward being offered to do so (Diabetes Monitor, 2006). Meeting activities need be interesting, fun and attractive to participants (Diabetes Monitor, 2006). For example, asking group members about how well they work together and what they would like to change in order to do better is recommended (Diabetes Monitor, 2006). Self-help group members also get involved in fundraising and campaigning events designed to improve local diabetes services (Diabetes Monitor, 2006; Diabetes UK, 2007). Overall, these findings further inform the proposed study. In this respect, the practical considerations offered to this writer will be more fully articulated in the methods section for the proposed study found in the chapter of methodology.

While the health outcomes among elders with type 2 diabetes who participate in self-help groups clearly appear to be positive, what is unclear is the mechanism by which positive change occurs among these elders. Studies do not report the mechanism by which self-help groups affect positive change in order to improve health and quality of life among elders. As to the objectives of the 10<sup>th</sup> NHDP and the 2<sup>nd</sup> NPOP that promote Thai elders to fully engage in self-care and health activities in communities, for rural-dwelling Thai elders with type 2 diabetes facing numerous self-care barriers, self-help group participation may be a vehicle for promoting their sense of self-care ability that, in turn, has the potential to enhance their overall health and quality of life. Hence, some possible mechanisms by which self-help groups might affect positive change among these elders will now be explored.

### **Mechanisms of Self-help Groups**

This session explored possible mechanisms of self-help groups among rural-dwelling Thai elders with type 2 diabetes on better changes in their self-care barriers and further improvement of their diabetic self-care ability and quality of life.

#### **1. Self-help groups in offering culturally-sensitive knowledge**

Cultural sensitivity is defined as an understanding of cultural and social characteristics, experiences, customs, beliefs, religion, and behavioral patterns among a particular group of people; relevant gender-based, environmental, and psychological forces that influence their behaviors are also of concern (Gayle, 2005). Culture can be defined as common values and beliefs held by a given group of people (Nui, 2005). In

this respect, culture is learned, shared, and transmitted from one generation to the next, and can be seen on a practical level in the ways people live out their lives (Gayle, 2005) and the ways they think and perceive (Nui, 2005). In Asia, it is considered a norm to value and live in multigenerational households (WHO, 2002, 2005), with daughters taking care of elderly parents (Lee, 2001). Given that self-care behavior operates within a culturally-specific context (Antonovsky, 1987; Gayle, 2005; Hektner, Schmidt, & Csikszentmihalyi, 2007; Lee, 2001; Watson et al., 2001), individuals' self-care behavior requires knowledge of their culture. Moreover, self-help groups transmit culturally-sensitive knowledge among group members (Leung, 2004; Resnicow, 2007; Kongphantu, 1992; Woongsook, 1998). Knowledge gained from sharing experiences among members is likely to fit with each member's life situation, and enhance receptivity and acceptance among group members (Gayle, 2005).

Elders with type 2 diabetes have difficulty of understanding health professionals' advice and prescribed interventions (Barton et al., 2005). Within a self-help group, the importing of culturally-sensitive knowledge has the potential to change behaviors in areas such as diet and exercise adherence among older people with type 2 diabetes (Barton et al., 2005; Watson et al., 2001). Different perspectives between elders with type 2 diabetes and healthcare professionals often lead to conflicts about treatment and care priorities, resulting in dissatisfaction with and disagreement about prescribed care regimens (Hornsten et al., 2004). As such, adherence to diabetic self-care regimens remains relatively low among elders with type 2 diabetes (Shaw et al., 2006). Better understanding of beliefs and values of elders among healthcare professionals might aid in development of interventions that increase elders' propensities for engaging in self-care and with this, adherence to a diabetic treatment regimen (Cancela, Chin, & Jenkins, 1998; Hornsten et al., 2004; Shaw et al., 2006). This could also, in turn, enhance overall well-being and quality of life (Cancela et al., 1998).

Low education is viewed as a self-care barrier among rural-dwelling Thai elders with type 2 diabetes (Ahmad & Isvilanonda, 2003; Knodel et al., 2005; National Statistical Office, 2001). Self-help groups that foster culturally-sensitive knowledge among their members might help elders commonly struggling with type 2 diabetes to better understand how to self-manage their illness in their own terms (Ben-Ari, 2002;

Lieberman & Bliwise, 1985). Culturally-sensitive knowledge is, perhaps, most needed within low-income communities, where the number of elders with type 2 diabetes is high and access to medical care for treating diabetes and its complications is often limited (Shaw et al., 2006). Understanding the cultural context of those Thai elders with type 2 diabetes who live out their lives in a rural community can foster a greater understanding among healthcare providers of how the beliefs, values, behaviors, and lifestyle patterns of these elders impact upon their self-care behavior. Understanding the cultural context of rural-dwelling Thai elders with type 2 diabetes in relation to self-care behavior may give rise to greater establish trust and develop strong working relationships with participants and local practitioners for advocacy the self-help.

### **1.1 Thai cultural beliefs**

The Thai social system is hierarchical, ranking authority from lowest to highest (Thailand Travelers, 2007). Thai people are positioned hierarchically in relation to others; for example, as younger to older or student to teacher (Thailand Travelers, 2007). Occupational status is especially important within this social order. Doctors, teachers and managers hold high social status and Thai people holding lower social positions are expected to respect these individuals (Naemiratch & Manderson, 2006). In order to show respect to doctors, it is not typical for patients with type 2 diabetes to indicate that they will not follow the doctor's recommendations, even if they are unable to do so (Naemiratch & Manderson, 2006). Thai society is also collectivistic, not individualistic (Bandura, 1997). *Collectivists* focus on social expectations; hence, their behaviors follow those of others. For example, Thai elders with type 2 diabetes will do regular exercise if they see others do so. *Individualists*, in contrast, focus on themselves and feel free to do what others do not (Bandura, 1997).

Buddhism is the religious of almost all Thai people (Kongin, 1998; Thailand Travelers, 2007). Buddhist philosophy advocates Thai people maintain social harmony by keeping their feelings inward to maintain harmonious relationships with others (Thailand Travelers, 2007). This entails avoidance and compromise rather than confrontation and this is done to enhance relaxation (Naemiratch & Manderson, 2006). Also, Thai people believe that their current life situation is influenced by good performance from a previous life, as is their next life (Thailand Travelers, 2007). Monks are respected among Buddhists as these individuals are thought to be

representatives of Buddha. Thai elders believe that if they support monks in their community temple, they will experience well-being today and in the next world (Thai Information, 2006). Hence, Thai elders have great respect for monks and turn to them for psychological support when they are unhappy and having trouble about their life circumstances (Thai Information, 2006).

### **1.2 Living patterns among Thai elders and family**

Many Thai elders in rural communities live with their adult children (71%) or live near them (16%), (Jitapunkul et al., 2006; Thai Information, 2006). A great number (88%) not living with their adult children (Jitapunkul & Chayovan, 2001) are visited by them several times a week (47%), and by their neighbors and friends (76%), (Knodel et al., 2005). Three generation households are common among rural families and among these, 89% are headed by an elder (Knodel et al., 2005). Adult children who migrate to urban areas leave one or more of their own children to be cared for by their elderly parent (Knodel et al., 2005). Most of these elders are supported by their adult children (77%), (Knodel et al., 2005; Kongin, 1998). Elders take pride in adult children who provide financial support in their absence and are ashamed if their children do not (Thai Information, 2006). Daughters who are married are expected to financially support an older parent; not doing so brings shame upon the elder (Thai Information, 2006).

Showing respect for elders is an integral practice in traditional East Asian families (Johnson, 2005). In the rural areas of Thailand, elders are still very much respected by the young as a result of advice giving and counseling (Thai Information, 2006). A survey of Thai elders living with their children in rural areas indicated that although they felt fussy about their adult children (17%) and lonely (12%), these elders also felt comfortable (85%), worthy (80%), warm (63%), respected (58%), and cared for (57%), (Knodel et al., 2005).

### **1.3 Cultural beliefs and values related to health of Thai elders**

The principal form of long-term care in Thailand is informal care (Jitapunkul et al., 2006). Rural Thai families are generally expected to take care of their elderly members; 93% of older persons want their children to be their caregivers when they need assistance (Jitapunkul et al., 2006). In a survey conducted on older persons in rural communities, elders were primarily taken care of by their adult children (64%)

and then, their spouse (27%) (Jitapunkul & Chayovan, 2001). The health system in rural communities rests on a foundation of self-care fostered through using local knowledge and traditional Thai medicine for treating diseases (Phromsaard & Rotanaphrai Wong, 2006). Village doctors (villagers who have knowledge about disease and know how to treat with traditional medicine), midwives, and monks are considered credible and capable healthcare providers (Phromsaard & Rotanaphrai Wong, 2006). Traditional medicine reflects the thinking and beliefs of rural-dwelling Thai elders and, moreover, is considered to be a form of psychological support for these elders (Phromsaard & Rotanaphrai Wong, 2006).

#### **1.4 Thai elders' beliefs about type 2 diabetes**

Individuals' understanding of illness is strongly influenced by a host of factors including their culture and religious beliefs (Hornsten et al., 2004). Older Thai people with type 2 diabetes tend to define this illness based on their cultural beliefs and values (Aikins, 2004). For example, *sweet urine disease* has become the most common definition of diabetes among Thai persons as it is involved with high-sugar urine (Pitayarak, 2004; Sunvijit, 2005; Surit, 2001; Thaniwattananon, 2001; Tiampracha, 2004). The notion of *disease of the wealthy* is also used within rural communities as diabetes is linked to wealthy lifestyles and expensive care (Khon Kaen University, 2003). What Thai older people believe and understand about type 2 diabetes and its management differs from healthcare providers (Naemiratch & Manderson, 2006). Differences in understanding influence the effectiveness of behavioral modifications for achieving blood sugar control (controlling diet, exercise and adherence to medication), (Naemiratch & Manderson, 2006). Perceiving their diabetes cannot be cured, these elders believe they are not able to take care of themselves and wait for treatment from healthcare providers (Khon Kaen University, 2003; Tiampracha, 2004).

In terms of understanding type 2 diabetes causes, descriptions vary. Some Thai elders with type 2 diabetes think high-fat foods, alcohol, obesity, eating in excess, and lack of physical activity contribute; others believe eating a lot of sweets and salt are a possible cause (Khon Kaen University, 2003; Tiampracha, 2004). Some also believe their diabetes is hereditary and for others, a result of an internal body organ disturbance, liver and kidney dysfunction, blood transfusion, and chemical

contamination in later life (Tiampracha, 2004). Many elders living in Northern Thailand believe that diabetes is caused by a ghost, a devil, or supernatural things (Khon Kaen University, 2003).

Illness management among older people is strongly linked to their cultural beliefs (Aikins, 2004). For older patients with type 2 diabetes in general, beliefs about the severity of diabetes can be associated with blood sugar control (Polly, 1992). If elders believe their disease is severe, they are more likely to engage in behaviors that maintain a blood glucose level at or as near to normal range as possible (Polly, 1992). Thai patients with type 2 diabetes often perceive that diabetes is an asymptomatic disease, especially if high blood sugar does not present with complications or interrupt the capacity to work. It is also not uncommon for Thai patients to seek treatment from doctors only when type 2 diabetes symptoms are visible (Sunvijit, 2005; Surit, 2001). Also, there is a tendency to control one's diabetes not too closely after presenting symptoms are first treated because individuals see themselves as being cured (Naemiratch & Manderson, 2006). Types of medication are also significantly related to blood sugar control (Polly, 1992). Older patients who take only oral medicine concentrate less on controlling their blood sugar level than do older patients who take insulin injections. Dietary control of Thai elders with type 2 diabetes is also dependent on illness duration, with day-to-day control being poorer among those having the disease longer (Sunvijit, 2005; Surit, 2001).

With the belief that high blood sugar can be neutralized with water and with bitter, sour, and salty food, Thai elders with type 2 diabetes control their blood sugar by eating large amounts of bitter herbs, sour fruits, water, or salt (Khon Kaen University, 2003; Pitayasak, 2004; Thaniwattananon, 2001; Tiampracha, 2004). When wounds are present, eating sticky rice and eggs is prohibited for fear of worsening inflammation and delaying healing (Tiampracha, 2004). While diabetic patients recognize the need for a prescribed diet and may acknowledge that any change is beneficial, they experience difficulty in following recommendations. For example, rice is a staple food among Thai people; despite doctor's recommendations that it be reduced, cutting down on rice intake is seen as impossible (Naemiratch & Manderson, 2006; Surit, 2001; Thaniwattananon, 2001). It is also difficult to decrease sweet food because Thai elders prefer eating sweet fruits with rice or other dessert after meals;

others adjust their oral medicine after eating sweets by taking added medication (Thaniwattananon, 2001). High blood sugar and the diabetic complications it poses elicit feelings of worry about altered body image and being perceived as different by others (Thaniwattananon, 2001). Most Thai elders with type 2 diabetes prefer to make themselves appear like others within their community; for example, they do not limit the kinds of food eaten during parties so that others will not worry about them (Tiampracha, 2004). Thai elders are also shamed to exercise in public by running, walking, or aerobic dancing as these are seen as appropriate for teenagers; what they deem elder-appropriate consists of moving their arms and legs within household confines (Tiampracha, 2004).

The researcher think that understanding about context surrounding participants including their cultural beliefs, living patterns, cultural beliefs and values related to health and diabetes, is important for the researcher to effectively conduct a self-help group based participatory action research in the study. The researcher can understand the participants' problems and needs for further seek to solve the problems for further positive changes that fit to participants' lives.

## **2. Self-help groups in providing social support**

Social support refers to positive interactions with others (Chappell et al., 2003). Social support is composed of three dominant components: emotional, informational, and appraisal or positive feedback (Strickland & Waltz, 1990). These components offer six categories of supportive behaviors: (1) material aid: providing tangible materials in the form of money and other physical objects; (2) behavioral assistance: sharing of tasks through physical labor; (3) intimate interaction: counseling behaviors such as listening, caring, and understanding; (4) guidance: offering advice, information, or instruction; (5) feedback: providing individuals with feedback about their behavior, thoughts, or feelings; and (6) positive social interaction: engaging in social interactions for fun and relaxation (Strickland & Waltz, 1990).

Social support has a positive effect on health, well-being and stress, particularly stress associated with chronic illness (Dungan et al., 1996; Gleeson-Kreig et al., 2002). Social support is the most basic requirement of older people as it enhances health, well-being, quality of life, security (Chappell et al., 2003; Lassey & Lassey, 2001; Maddigan et al., 2000; WHO, 2002), and health-promoting behaviors (Coe & Neufeld,

1999). Strong support appears to decrease the incidence of stress (Coe & Neufeld, 1999; Lassey & Lassey, 2001) by improving mood and a sense of companionship that enhances one's ability to cope with stress (Maddigan et al., 2000). Social support reduces alienation, fosters confidence, and motivates the chronically ill older adult to continue to cope. It instills a sense of hope (Low, 2000). Inadequate social support in older age is associated not only with an increase in mortality, morbidity and psychological distress; it also decreases overall health and well-being (WHO, 2005). In modern industrialized societies, older adults are often alienated from their adult children (Biggs, Lowenstein, & Hendricks, 2003; Johnson, 2005; Penning, 2002) and the loss of a spouse and friends renders them vulnerable and lonely (WHO, 2005). Elders who are mentally or physically disabled, and no longer fully manage their activity daily lives independently, become socially isolated from family, friends and community contacts (Lassey & Lassey, 2001). Loneliness and social isolation in older age is linked to declines in physical and mental well-being; however, supportive social connections and intimate relations are a vital source of emotional strength (WHO, 2005). Social connection through volunteering, helping neighbors, mentoring and visiting peers, and family caregiving (WHO, 2002, 2005) improve health and self-worth, and enable older people to make an active contribution to society (Becker, 2003; Chappell et al., 2003; McHugh & Larson-Keagy, 2005; Tay et al., 2004; WHO, 1999).

For elders with type 2 diabetes in particular, social support can improve blood sugar control, adherence to treatment regimens, self-care behaviors and quality of life, and decrease depression (Gleeson-Kreig et al., 2002; Surit, 2001). This finding is a key because diabetic treatment regimens require a strong commitment to self-care and lifestyle change (Gleeson-Kreig et al., 2002). Social support has strong potential to inspire the elders to engage in self-management (Coe & Neufeld, 1999; Gleeson-Kreig et al., 2002; Wilson & Mayor, 2006). Social support may come from networks of friends, neighborhoods and other people in the same community of the older person (Surit, 2001). Social networks positively influence health-related behavioral changes and enhance self-management of type 2 diabetes (Fast, Keating, Otfinowski, & Derksen, 2003; Shaw et al., 2006; Sunvijit, 2005; Surit, 2001). Having access to persons who provide advice has been found to increase knowledge and self-confidence

to engage in self-care behavior among elders with type 2 diabetes (Assuk, 2001; DeCoster & George, 2005; Gamsu et al., 2002; Gildea et al., 1992).

Thai elders in rural areas lack family support due to the expansion of industrial sectors (Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006) and family deterioration (Ahmad & Isvilanonda, 2003; Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006; Kosulwat, 2002). The migration of young people to cities for employment means fewer people are available to care for elders (Jitapunkul & Chayovan, 2001; Jitapunkul et al., 2006). Self-help group as a form of mutual assistance to resolve common problems (Ben-Ari, 2002; Lieberman & Bliwise, 1985; Nayar et al., 2004; Scholten, 2006) could serve as a proxy form of social support as these have been linked with enhanced self-management of type 2 diabetes (Gayle, 2005). Received support from self-help groups has included coping skills, meal preparation, exercise methods, herbal remedies, and general health care (Khon Kaen University, 2003). Emotional support, illness-related knowledge and skills, and practical advice are also derived from and provided through self-help group members (Aikins, 2004; Gildea et al., 1992; Lieberman & Bliwise, 1985).

Self-help groups could play an important role in enhancing adherence to treatment regimens and promoting quality of life of older people with type 2 diabetes (Gildea et al., 1992). Support from group members can enhance acceptance of the type 2 diabetes and reduce resistance to treatment regimens (Gildea et al., 1992). There is also a lesser incidence of mental health problems among people within self-help groups (Gildea et al., 1992). Managing diabetic treatment regimens alone can be difficult; self-help groups as a form of social support can help elders cope with their diabetes through the provision of information and encouragement (Joining People with Diabetes, 2006). As such, it seems reasonable to infer that self-help groups could potentially function as a proxy form of and an adjunct to family support among Thai elders with type 2 diabetes.

### **3. Self-help groups in promoting empowerment**

Empowerment is defined as both a process and an outcome by which people exhibit some degree of control and involvement in their lives (DeCoster & George, 2005). Empowerment is also defined as the degree to which an individual, group, or environment is changed so that more control can be gained (Emerick, 1995). In doing

so, empowerment may promote concern over social and political authority, and legal rights (Emerick, 1995). Empowerment may also promote a sense of self-esteem, self-efficacy, and self-control (Emerick, 1995; DeCoster & George, 2005). Empowerment occurs when one becomes able to take action for oneself and on behalf of others (Kurtz, 1997). Self-care in relation to type 2 diabetes demands more than knowledge acquisition and skill mastery; it requires acceptance of the disease, motivation to change, instrumental and emotional support, problem-solving skills, and a sense of personal control (DeCoster & George, 2005; Grady et al., 2001).

Empowerment is acknowledged as the major purpose or goal of self-help venues (Emerick, 1995; Kurtz, 1997; Lee, 2001). In this respect, self-help groups have the power to influence members' capacities for change, choice, and problem solving through building morale, increasing social ties, and promoting the exchange of views among members (Lee, 2001). In diabetic self-help groups, sharing suggestions, experiences, and opinions, and taking leadership roles during meetings, promote a sense of empowerment (DeCoster & George, 2005; Kurtz, 1997). Self-help groups are a place where elders with type 2 diabetes can join with others to mobilize their resources to solve problems; this contributes to a feeling of empowerment (DeCoster & George, 2005; Kurtz, 1997). Self-help groups provide members with an environment that encourages and supports self-control (DeCoster & George, 2005) and influences positive health-related behavior changes to maximize self-care potential (Wong et al., 2005). Group members focus on educating, encouraging and supporting one another in terms of lifestyle adjustments and self-care needs. Hence, members collectively review and confirm their own knowledge, skills and abilities in relation to diabetic self-care; this often increases their sense of confidence and control (DeCoster & George, 2005). Members listen to each other, care for each other, work together to understand and manage their symptoms (Joining People with Diabetes, 2006), and provide mutual aid for immediate needs, collaborative problem solving and decision making in a milieu where the leader is a group member (DeCoster & George, 2005). In effect, self-help groups also influence the formation and/or modification of values, beliefs, attitudes, and behavioral change (Lee, 2001).

#### **4. Self-help groups in fostering perceived self-efficacy**

Individuals' behaviors are influenced by the way in which individuals perceive themselves and their competence; this is termed *perceived self-efficacy* (Bijl et al., 1999). Self-efficacy refers to beliefs in one's capabilities to control and organize events that affect one's life and to carry out action required to successfully meet given situational demands (Aleksiuk, 1996; Aljaseem et al., 2001; Bandura, 1997; Hurley & Shea, 1992; Kear, 2000; Maddux, 1995; McShane, 2007; Strickland & Waltz, 1990). Self-efficacy plays an important role in motivation and is defined as the confidence a person has in performing a particular behavior to attain a desired outcome (Garrett et al., 2005; Kear, 2000; Torres, Torres, Rodriguez, & Dennis, 2003). In other words, self-efficacy is a sense of "I can do" that is oriented to behaviors or actions that people take (Strickland & Waltz, 1990). Self-efficacy is the most important requisite for behavioral change (Garrett et al., 2005) and the maintenance of efforts to succeed in such change (Bernal et al., 2000; Hurley & Shea, 1992; Kear, 2000). Self-efficacy levels can enhance or impede one's motivation to act in that those with high self-efficacy tend to invest more effort and persistence in what they do compared to those with low self-efficacy (Conner & Norman, 1995).

Self-efficacy has a beneficial effect on health behavior and health status among older persons (Clarke et al., 2000; Grembowski et al., 1993). In older age, losses in physical stamina, sensory function and memory can lead to a subsequent loss of opportunity to be actively engaged in society. Enhancing elders' capacities to gain both knowledge and skill has the potential to compensate for such loss and increase self-efficacy (Bandura, 1994, 1997). Elderly patients with type 2 diabetes often have difficulty in adopting lifestyle changes and adhering to their diabetic treatment regimen, and doing so independently i.e. self-care (Bijl et al., 1999; Bonds et al., 2004). Self-efficacy among these individuals has been found to increase both adherence and self-care with respect to diabetic regimens (Bonds et al., 2004). Social support is also a primary factor that enhances self-efficacy in this respect (Glasgow, Toobert, & Gillette, 2001). Hence, social support within the context of self-help groups (Cassidy, 1966; Dungan et al., 1996; Kwok, 1998; Leung, 2004) has the potential to increase self-efficacy among rural-dwelling Thai elders with type 2

diabetes respect to engaging in self-care. To this end, this mechanism by which self-help groups might enhance self-efficacy would be touched upon.

Four principal methods of enhancing self-efficacy among individuals have been proposed. These are: 1) enactive mastery, 2) vicarious experiences, 3) verbal persuasion, and 4) physiological and affective states (Bandura, 1982, 1994, 1997; Bernal et al., 2000; Garrett et al., 2005; Hurley & Shea, 1992; Maddux, 1995; Strickland & Waltz, 1990). *Enactive mastery experiences*, as indicators of individual capacity, are the most influential (Bandura, 1997; Hurley & Shea, 1992; Strickland & Waltz, 1990) in that they provide evidence of whether one has what it takes to succeed (Bandura, 1997). Self-efficacy is akin to perceived capabilities and with this, the more difficult the task, the greater the effort expended (Bandura, 1997). Emotional support received from self-help group members may increase the amount of effort Thai elders with type 2 diabetes expend to deal with the self-care barriers that confront them. *Vicarious experiences* occur when individuals compare their attainments to those of others who are of similar status (Bandura, 1997). If individuals judge the performance of others to be superior to their own, in theory, they will raise their efforts to improve their own performance (Bandura, 1997). Similarly, if type 2 diabetes elders see a peer who can control her blood sugar well, they may also try to do so. *Verbal persuasion* serves as a means of strengthening peoples' beliefs that they possess the capabilities to achieve what they desire (Bandura, 1997). Self-efficacy increases when people struggle with difficulties and are persuaded by others that they can overcome such difficulties; this might occur, for example, when Thai elders hear a group peer tell them that they are able to overcome self-care barriers and manage their type 2 diabetes (Bandura, 1997).

Given that *physiological and affective states* are indicators of self-efficacy (Bandura, 1997; Hurley & Shea, 1992), self-efficacy can improve physical health status, and reduce stress levels and negative emotional proclivities (Bandura, 1997). Indeed, self-help groups have been found to improve overall health status (Nayar et al., 2004; Wituk et al., 2000), and reduce stress (Kongphantu, 1992; MacDonald, 2006; Srichairattanakul, 1998) and other negative emotions such as depression (Hill, 1998; Techavanit, 2001).

Cultural orientation also influences self-efficacy in both collectivistic and individualistic society (Bandura, 1997). Here, individualists are most efficacious when they can manage things themselves; in contrast, collectivists are most efficacious when they manage things together (Bandura, 1997). Given that Thai elders reside in a collectivistic society, self-help group would serve as a culturally-appropriate mechanism by which their capacity to overcome self-care barriers and to more regularly engage in self-management of their type 2 diabetes could be enhanced. Clearly, self-help groups appear to offer much potential benefit to elderly participants recruited to participate in this study. Hence, how self-efficacy enhances diabetes self-care was explored next.

### **Self-efficacy in Enhancing Diabetic Self-care**

High self-efficacy is associated with successfully carrying out regimen-specific health-related behaviors (Strickland & Waltz, 1990). It has been argued there is a connection between self-efficacy and self-care among diabetics; self-care is complex, as it requires the capacity to monitor, plan and carry out diabetic-related activities of daily living (Bijl et al., 1999; Strickland & Waltz, 1990). Past research strongly support a positive association between self-efficacy and self-care ability among patients with type 2 diabetes (Aljaseem et al., 2001; Bernal et al., 2000; Bijl et al., 1999; Hurley & Shea, 1992; Rapley et al., 2003). More specifically, self-efficacy is a significant predictor of adherence to self-care (Aljaseem et al., 2001; Bernal et al., 2000). Patients with higher levels of self-efficacy are better able to manage their diabetes self-care (Bijl et al., 1999; Hurley & Shea, 1992). Self-care is an important mechanism by which self-efficacy influences such lifestyle choices as diet and exercise (Rapley et al., 2003). For individuals with type 2 diabetes, specifically, self-care in the form of exercise, diet, medication management, and blood glucose monitoring imposes daily demands; successful performance of these is influenced by the sense of competence (Aljaseem et al., 2001). As such, self-efficacy is a necessary ingredient for patients with type 2 diabetes as it is likely to enhance their capacity and propensity for self-care (Bernal et al., 2000; Bijl et al., 1999; DeCoster & George, 2005; Garrett et al., 2005; Gleeson-Kreig et al., 2002; Rapley et al., 2003). Self-efficacy is an important component of diabetes management as it can be used to predict the individual's capability to adhere to self-care behaviors (Aljaseem et al.,

2001; Bernal et al., 2000; Hurley & Shea, 1992; Rapley et al., 2003; Strickland & Waltz, 1990). Patients with type 2 diabetes who believe they can control their diabetes through engaging in self-care behaviors are likely to devote their efforts to do so (Aljaseem et al., 2001; Hurley & Shea, 1992; Torres et al., 2003).

In sum, enhancing self-efficacy through self-help group participation could promote the confidence to engage in self-care among rural-dwelling Thai elders with type 2 diabetes so as to allow them to more independently manage their illness. Gains in self-efficacy from self-help group participation would enhance their propensity and capacity to independently manage their diabetic regimen. Process methods such as enactive mastery and vicarious experiences, verbal persuasion, and physiological and affective states are likely to be beneficial to Thai elders with type 2 diabetes.

### **Knowledge Gaps in Diabetic Self-help Group Research**

Review of empirical diabetic self-help research provided existing knowledge gaps as follows:

#### **1. An experimental condition**

Most empirical diabetic self-help group research focused on experimental and quasi-experimental designs. The studies for outcome evaluations required random assignment a control condition (Kurtz, 1997). Though the randomized process offered strong outcome evaluations, the random assignment could not achieve the goal of self-help group concept that was to join voluntary (Schwartz, 2000). The random assignment study could be considered unethical to deny providing an intervention or activity that has the potential to improve the health and well-being of elders with the reason of randomized process. It is unfair to deny participation in an involvement that has the probability to improve the health and well-being of elders (Trozzolino et al., 2003). Hence, it is questionable that participants in a control group should not receive treatments that are thought to be beneficial.

#### **2. Lack of fit with participants' conditions**

The random assignment study could not fit to the characteristics of rural-dwelling Thai elders with type 2 diabetes. Older participants would have difficulty with random assignment because of other chronic conditions or illiteracy would interfere with their participation in adhering to or understanding research procedures (Applegate & Curb, 1990; High & Doole, 1995). The characteristics of Thai elders

with type 2 diabetes, the participants in this study, differ from the participants in the empirical research studies. Rural-dwelling Thai elders typically have little to no income, and have low education and dwindling family support. It is difficult for them to go to clinical settings for meetings or to receive research-related treatments because they have little if any money for transportation, and are likely not to have assistance from their family. Moreover, most Thai elders cannot read and write; it is likely hard for them to understand research documentation and in this vein, if the researcher asks the Thai elders to complete a survey with open ended questions, they are not able to do so except doing with assistance or personal interviews.

### **3. Lack of context fit**

The use of self-help groups in existing studies took place in hospital settings, with both the goals and activities being defined by the researcher. In this respect, the lack of context fit of community setting between cultural values and beliefs of the researcher and participants could possibly contribute to the lack of a long term effect on maintaining self-care ability (Sringunying, 2002) among the elders with type 2 diabetes.

### **4. Few reporting participants' perception about changes**

Few studies from the review focused on self-help group processes, information related to how to build/develop groups and the kinds of activities under taken were provided and typically also did not report participants' perspectives about why their behaviors change. Outcomes such as self-care ability, self-efficacy and quality of life would tell us very little about the actual effectiveness of self-help group participation (Kurtz, 1997). In light of existing self-help group research, it appeared not possible to identify specifically what aspects of self-help group intervention led to improved self-care behaviors, adherence to a treatment and feelings of control among participants (Gamsu et al., 2002). Some interesting questions yet to be addressed in self-help group research could be how self-help groups foster participants to better control their blood glucose, and differences in impact of group member led versus professionally led self-help groups (Gilden et al., 1992). Effective self-help group intervention research appears to focus on evaluating of overall health as a whole rather than specific mechanism that lead to positive behavioral change per se among the participants (Gamsu et al., 2002; Garrett et al., 2005). Among the few studies that

focused on self-help group processes, information related to how to build/develop groups and the kinds of activities undertaken were all that was provided. These studies typically also did not report participants' perspectives about why their behaviors changed.

Knowledge gaps above provided directions of conducting a self-help group research of this study. Participatory action research as a method providing tremendous value on empowerment (Cornwall & Jewkes, 1995; Lewin, 1946) was used to collaborative work with participants through a self-help group process. This occurred through increasing confidence to use knowledge among rural-dwelling Thai elders with type 2 diabetes to overcome the self-care barriers they faced. The knowledge derived from brainstorming among them for positive changes likely fit with their life conditions and improved their self-care ability and quality of life in the long run. This study also integrated both qualitative and quantitative approaches for data collection. Gathered information using qualitative approach by focus group discussion and observation could reflect participants' perspectives about why their behaviors changed. When mechanisms of change are self-identified, facilitators can further more develop guidelines for a successful self-help group experience (Maxwell et al., 1992). If the mechanisms of self-help group participation that promote positive changes among Thai elders with type 2 diabetes are explored, self-help groups could be further proposed as an effective method of self-managing this illness in the long run. Gathered information using quantitative approach by providing survey questionnaires could confirm such changes quantitatively. As such, this study had conducted a self-help group based on participatory action research method to enhance self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes.

### **Chapter Summary**

In sum, in this chapter, a review of literature related to the prevalence of type 2 diabetes in older adults along with its risk factors and impacts on physical and psychological health, and opportunity for social connectedness or social isolation, and the burden this posed to individuals, families and society as a whole was provided. The chronic, disabling, and demanding nature of type 2 diabetes requires that elders perform intensive self-management, i.e. maintaining body weight and a diabetes diet,

to control their blood glucose, prevent or delay complications, and maintain their well-being and independence. Self-care, defined as an activity that a person independently performs to maintain health and well-being is considered a key to manage type 2 diabetes over the long-term. That said; Thai elders living in rural communities, the focal group of interest in the study, face many barriers to self-care including low education, poverty, lack of family support, and limited access to health and continuing care services that put them at great risk for poor blood sugar control and complications such as heart disease and kidney failure. Diabetic complications have been found to pose a threat to both overall health and quality of life in older age. The promotion of self-care is important in the context of policies and plans both worldwide and in Thailand. In the Active Ageing Framework, the Thai 10<sup>th</sup> National Health Development and the 2<sup>nd</sup> National Plan for Older Persons; the overall values and goals focus on promoting overall health and quality of life, as well as active participation in society and autonomy and independence in older age, particularly self-care ability.

Critical social theory was served as a prudent guiding framework for this study because it assisted elders to gain power and control over their lives. This is a key in that Thai elders in rural communities typically have to overcome a number of contextual barriers to fully engage in self-care and consequently may not experience good health and quality of life. Requisite to enhancing their potential to act as self-care agents for themselves is the acquisition of greater knowledge and confidence to better enable them to independently manage their diabetes. Under the auspices of critical social theory, participatory action research is one particular research method wherein researchers and participants could collaborate to better understand and explore self-care barriers. Participatory action research espoused the value of emancipation and empowerment as the researcher helped the elders to identify constraints affecting their day-to-day life circumstances and to brainstorm about ways to overcome such constraints. To realize this, the researcher had worked closely with elder participants.

Self-help groups as a form of mutual aid falling under the auspice of participatory action research offer much benefit to elders with type 2 diabetes, including improvement of physical, mental and social health, and their capacity for type 2 diabetes management. Though empirical studies related to self-help group typically

reported positive health outcomes, the mechanism by which positive change occurring had yet to be explored among elders with type 2 diabetes. Existing empirical research had other limitations including its use of experimental methods and the lack of seeking out participants' own views on self-help group participation and how changes in their health and well-being were brought about. As such, this study was designed to explore the mechanism by which self-help group participation impacted upon the improvement of self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes.

A review of the literature yielded a number of possible social processes or mechanisms by which health and well-being might be impacted. More specifically, culturally-sensitive knowledge, social support, empowerment, and self-efficacy might explain why self-help group participation is beneficial for elders with type 2 diabetes. The notion of self-help groups providing culturally-sensitive knowledge stems from the finding that self-care is culturally-based (Orem et al., 1995, 2001; Strickland & Waltz, 1990) and self-care practices manifest and operate within the elders' own community (Antonovsky, 1987; Gayle, 2005; Hektner et al., 2007; Lee, 2001; Watson et al., 2001). Culturally-sensitive knowledge gained from the sharing of experiences among group members is likely to help Thai elders with type 2 diabetes better understand how to self-manage their type 2 diabetes in their own terms. The idea of self-help group as social support derived from the definition that social support refers to positive interactions with others by providing emotional, informational and material aid (Chappell et al., 2003; Strickland & Waltz, 1990). Thai elders often live alone because their adult children work outside the home; hence, managing their diabetic treatment regimens alone can be difficult. Self-help groups as a supplementary form of social support might help Thai elders cope with their type 2 diabetes through the provision of, for example, information, and material aid encouragement (Chappell et al., 2003; Strickland & Waltz, 1990). Self-help groups could also be empowering for the Thai elders in that they foster a sense of collective control and involvement (DeCoster & George, 2005). Elders collectively share their knowledge and experiences with one another with a view to helping each other better manage their diabetes more independently.

Self-help groups would enhance self-efficacy by promoting Thai elders' confidence to engage in self-care. Individuals' behaviors are influenced by the way in which they perceive themselves and their competence (Bijl et al., 1999). Possible mechanisms proposed to enhance self-efficacy include, for example, enactive mastery and vicarious experiences (Bandura, 1982, 1994, 1997). Emotional support received from self-help group members may also increase the amount of effort Thai elders with type 2 diabetes expend to deal with managing self-care barriers that confront them. If an elder interacts with and sees a peer who can control his or her blood sugar well, that elder is likely to put in more effort to do so. In a self-help group setting, these mechanisms could manifest through sharing experiences and offering advice related to type 2 diabetes self-care practices among group members.

Knowledge gaps about self-help group research have been found in terms of lack of fit about research design to characteristics, community settings, cultural values and beliefs; among elders with type 2 diabetes. Doing so would be due to lack of long term effect to contribute research outcomes. As such, the collaborative working between the researcher and elder participants of this study through a self-help group process based participatory action research could be a key to enhance their self-care ability and quality of life in long run.

## **CHAPTER III**

### **METHODOLOGY**

This chapter provided the methodological process for the study, including research design, participants and recruitment method, research setting, and research instruments for gathering data. The data collection procedures were conducted under the auspices of participatory action research, a 5-step research approach described through a self-help group process. The protection of human subjects and data analysis plan, both qualitative and quantitative, were also provided. Research trustworthiness was then clarified.

#### **Research Design**

The design of this study was the integration of qualitative and quantitative approaches through a participatory action research method. The researcher and participants collaboratively worked in a 5-step research process of planning, acting, observing, reflecting, and revising the plan to build a self-help group. The duration of data collection was six months in order to be sufficient to see some changes in self-care ability and some adjustment of lifestyle among participants (Rapley et al., 2003). The participants took part in the self-help group at group meetings for a total of 12 sessions. The procedure and activities in the group meetings were defined by the participants and the researcher. The measured clinical outcomes were diabetic self-efficacy, fasting blood sugar levels, quality of life, and the participants' perception about how their experiences of participating in the self-help group affected their self-care ability and quality of life. The qualitative data of the participants' perceptions about how their experiences of participating in the self-help group affected their self-care ability and quality of life were collected at every group meeting by focused group discussion and observation. The quantitative data i.e. the participants' self-care ability, quality of life and fasting blood sugar levels, were collected at the initial period and after the self-help group had been established for six months by using survey questionnaires and a chart review of blood sugar testing at a diabetic clinic (see Figure 3.1).

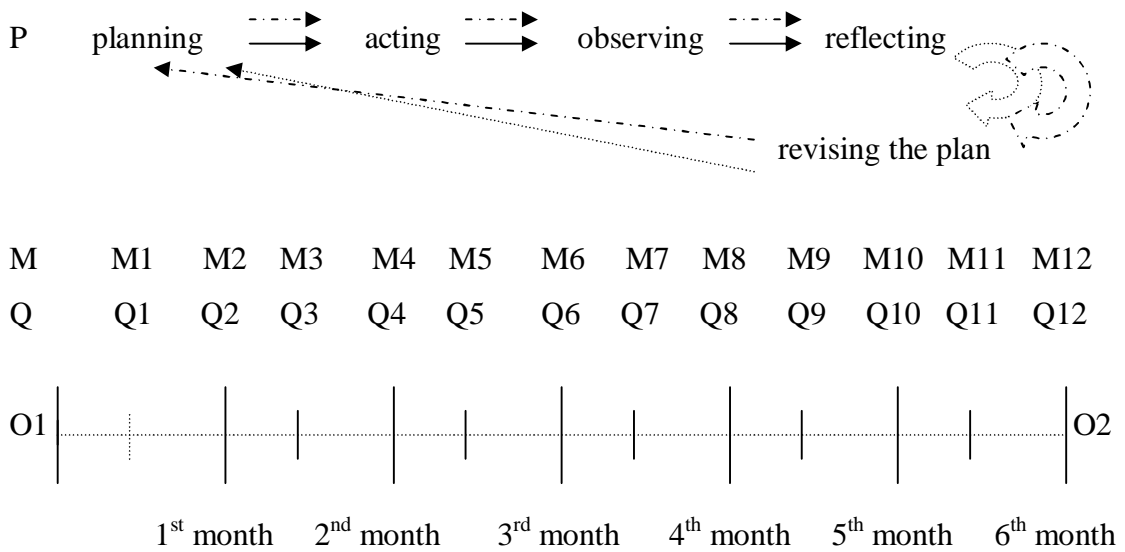


Figure 3.1 Plan of implementation for the study.

P: The researcher and participants collaboratively worked in a 5-step participatory action research process of planning, acting, observing, reflecting, and revising the plan to build the self-help group throughout the entire six months of the study (see the details in the data collection procedures).

M: Group meetings were arranged every two weeks for a period of six months. The length date, time, place, objectives, procedures and activities of the group meetings were defined by the participants and the researcher (see the details in Table 3.1).

Q: The qualitative data has collected every two weeks at the group meetings for six months by focusing on group discussion and observation. While focused group discussion, the researcher discussed with following question guides with participants to evaluate the patients’ perceptions about their experiences of how participating in the self-help affected their self-care ability and quality of life including some changes about self-care abilities and quality of life.

O1: The quantitative data were collected one month before establishing the self-help group by using three sets of survey questionnaires on the personal information sheet (Appendix J), the WHO Quality of Life-BREF-Thai (WHOQOL-BREF-THAI), (Appendix K), and the Diabetes Self-efficacy Scale-Thai (DSES-THAI), (Appendix L). The personal information sheet was used to collect participants’

personal information such as the duration of their type 2 diabetes and methods of health service payments. The WHOQOL-BREF-THAI was used to evaluate levels of participants' perceptions related to their quality of life. The DSES-THAI was used to evaluate the levels of participants' self-care ability. Fasting blood sugar levels from the participants' booklet and a chart review at their diabetic clinic was also recorded to evaluate their self-care ability.

O2: The quantitative data were repeated after the self-help group had been established for six months by using the survey questionnaires of the WHOQOL-BREF-THAI and the DSES-THAI. Participants' fasting blood sugar levels were accessed again to compare with the prior results.

### **Participants and Recruitment Method**

Participants were male and female Thai elders diagnosed with controllable and uncontrollable type 2 diabetes receiving health services at diabetic clinic of a primary care unit at Bang Pa Han District, Ayutthaya Province. The total amount of elders who received health services at this diabetic clinic was 54 persons. The researcher selected this rural village to conduct the study by random sampling from several villages which had a high prevalence of elders with type 2 diabetes and was located in the industrial center of the Bang Pa Han District. The researcher recruited the participants by informing the purpose of the study to 54 elders receiving diabetic clinic service and approached the persons who preferred to participate in the study.

The inclusion criteria included the following: 1) participants ability to hear and speak, 2) residence in a rural village located in the Bang Pa Han District and 3) willingness to participate in the self-help group meetings for at least 10 out of 12 sessions (80%). The exclusion criteria included the following: 1) the participants who had severe complications such as heart diseases and the final stages of renal failure and 2) persons who attended the group meeting less than 10 times. The process of the participant recruitment method was performed as follows:

1. Two months before conducting the study, the researcher sent a letter requesting permission to conduct the study from the Faculty of Graduate Studies of Mahidol University to the provincial and community public health offices, and the primary care unit of the rural village in the Bang Pa Han District. This primary care unit provided the health services of a diabetic clinic to the participants.

2. After receiving the ethical documentary proof of the Mahidol University Institutional Review Board (MU-IRB), (Appendix A) and the permission to conduct the study from the primary care unit, the researcher approached and asked a registered nurse at the primary care unit to apply for elders who met the inclusion criteria and wanted to participate in the study by reading the participant information sheet (Appendix B) to the elders at the diabetic clinic. The participant information sheet contained the researcher's name and contact information, affiliated university, purposes, procedures, benefits, duration, proposed risks, confidentiality issues and also the rights for withdrawal from the study.

3. One month before conducting the study, the researcher then visited the diabetic clinic of the primary care unit (providing services on the second Thursday of every month from 6:00 a.m. to 12:00 p.m.) and approached the consenting participants as they waited for treatments and oral medications from a physician from 7:00 to 9:00 a.m. The researcher informed the participants about the study in detail and addressed the participants' questions and concerns about the study, determining the persons who wanted to participate in the self-help group. Informed consent forms (Appendix C) were obtained from the 20 participants agreeing to participate in the study.

4. After the participants had signed their names on the informed consent form, they received three sets of survey questionnaires: 1) the personal information sheet (Appendix L), 2) the WHOQOL-BREF-THAI and 3) the DSES-THAI, asking about their personal information, perceptions about quality of life, and diabetic self-care ability. The participants' fasting blood sugar levels were recorded from a chart review. The researcher made an appointment with the participants and a registered nurse of the primary care unit (the research assistant) for the next meeting at the diabetic clinic one month later (the time of the meeting was set by the participants).

### **Research Setting**

The study was conducted in a small rural village in the Bang Pa Han District, Ayutthaya Province. The rural village was located in a non-municipal area of Ayutthaya Province, approximately 89 kilometers from Bangkok. The population age of 60 and older living in the Bang Pa Han District had 5,876 people (the total population of the district was 38,799), (Phra Nakhon Si Autthaya, 2007). The Bang Pa Han District was one out of three districts in the Ayutthaya Province which had an

industrial center. As such, many industrial factories were existed nearby and many adult children left their parents alone due to work commitments outside the home. Public transportation services were not available in the rural villages. Some villagers used personal motorcycles and motorbike taxi services for traveling short-distances. For long-distance traveling, they sought help from neighbors who had personal vehicles. The community and provincial hospitals tended to be far from the village (5 kilometers from the community hospital and 20 kilometers from the provincial hospital). The primary care unit of this rural village was only one primary care unit providing general healthcare and diabetic clinic services to this village in the Bang Pa Han District. The three healthcare providers of this primary care unit comprise a registered nurse and two public health officials. The diabetic clinic provides services on the second Thursday of each month from 6:00 a.m. to 12:00 p.m. Fifty-four elders with type 2 diabetes came to reserve a service queue and measured their body weight by themselves from 4:30 a.m. They were tested for fasting blood sugar levels and had blood pressure measured from 6:30 a.m. to 7:00 a.m. Then they had breakfast they had prepared from home. Thereafter, a physician and three registered nurses from the community hospital of the Bang Pa Han District would examine and prescribe treatments from 9:00 a.m. to 12:00 p.m. The primary care unit offers no health education instruction in the diabetic clinic. The information reported by the physician and registered nurses of the community hospital was typical in that most elders with type 2 diabetes in this village could not control their blood glucose levels. Several elders had continuously increased fasting blood sugar levels more than 200 mg/dl. Several elders experienced complications such as cataracts, hypertension, numbness of the limbs and chronic foot wounds. In light of the intention of this study to enhance self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes through a self-help group process, it was felt pertinent to choose this specific village as a research site for the study.

### **Research Instruments**

The research instruments used for collecting data in the study were both qualitative and quantitative. The instruments for collecting qualitative data included the group discussion and observation guides. Instruments for collecting quantitative data included the personal information sheet, the WHOQOL-BREF-THAI, the DSES-

THAI, and fasting blood sugar levels from a chart review of the primary care unit. The purpose, content, scale of measure, and the validity and reliability of each instrument is provided as follows:

### **1. The focused group discussion guides**

The focused group discussion guide is semi-structured as it comprises a few prepared open-ended questions arranged in logical order to cover the conceptual ground required (Morse & Richards, 2002). This approach yields participants' accounts with minimal interruption from the researcher (McKernan, 1996). In this study, there were four sets of open-ended questions proposed by the researcher. The content of these questions were validated by experts of the Faculty of Nursing and the ethical approval of the MU-IRB at Mahidol University was obtained a priori in order to avoid sensitive questions that might create stress or embarrassment for the participants. These guides were used to ask participants during the focused group discussion. Focused group discussion is discussion with groups of about 5-15 people by wherein the interviewer guides the discussion according to a set of questions (Polit, Beck, & Hungler, 2001). The advantages of a group format are that it is efficient and is effective at generating dialogue (Polit et al., 2001). For this study, participants agreed to have focused group discussion with 20 persons. The question guides are as follows:

#### **1.1 The question guide for focused group discussion at the 1<sup>st</sup> meeting**

The question guide was performed during the focused group discussion at the first meeting to evaluate participants' perceptions about their self-care ability, quality of life, disadvantaged conditions to manage diabetes and the things they wanted to change in order to improve those conditions. The question guide comprised 11 questions asking about, for example, how participants felt about their ability to manage their diabetes and quality of life, things that made it difficult for them to practice self-care and what they knew would improve that situation (see Appendix D). This guide was used to ask participants during the focused group discussion at the first meeting.

### **1.2 The question guide for general focused group discussion at the end of every meeting**

The question guide was used during focused group discussion at the end of every meeting, to evaluate participants' opinions about helpful participation in each meeting and means of improvement for further meetings. The question guide comprised three questions asking about the participants' perception of the proceedings in that meeting, the most helpful information they had received and whether or not they would make changes for the next meeting (see Appendix E).

### **1.3 The question guide for focused group discussion at the 2<sup>nd</sup> and 4<sup>th</sup> month**

This question guide was used to ask participants during focused group discussion at the second and fourth months after the self-help group was established to evaluate changes and the causes of changes in how they managed their diabetes after participating in the self-help group for two and four months. The question guide comprised seven questions asking about, for example, the most important things the participants had learned and whether or not they had made any changes in how they managed their diabetes (see Appendix F).

### **1.4 The question guide for focused group discussion at the 6<sup>th</sup> month**

This question guide was used to ask participants during focused group discussion during the meeting at the sixth month after the group had been established, to evaluate participants' opinions about the things they had learned from the group, changes and causes of change in how they managed their diabetes and their current perceptions about their quality of life after participating in the self-help group for six months. The question guide comprised five questions asking about, for example, what participants had learned and whether anything had changed about the way they managed their diabetes (see Appendix G).

## **2. The observation guide**

The observation guide detailed 20 cues developed by the researcher to observe events during focused group discussion in every group meeting. The guide was used to evaluate themes of reflecting the disadvantaged conditions such as financial status and healthcare service accessibility and factors affecting changes in how participants managed their diabetes. Generally, the observation cues focused on what themes the

participants had discussed most about how they managed their diabetes and how group members had shared encouragement with one another (see Appendix H). These cues served as a preliminary guide for the researcher; hence, more would be added depending upon observation throughout the duration of the study.

### **3. The personal information sheet**

The personal information sheet comprised 11 checklists-questions developed by the researcher and obtained ethical approval from the MU-IRB asking about participants' gender, age, education level, income, number of family members with whom they resided, and duration of type 2 diabetes (see Appendix J). The personal information questionnaire was completed by participants after the informed consent forms had been obtained at the diabetic clinic. The personal information sheet was provided to all participants by the interviewer-administered method. The researcher and a research assistant, a registered nurse of the primary care unit, read out the questions and recorded the answers of the respondents. It was estimated that the questionnaire took approximately 5-10 minutes to complete.

### **4. The WHO Quality of Life-BREF-Thai (WHOQOL-BREF-THAI)**

The WHOQOL-BREF-THAI was translated from the English version of the World Health Organization Quality of life-BREF known as the WHOQOL-BREF. The WHOQOL-BREF is a shorter version developed from the WHOQOL-100 (WHO, 2007e). It is an international cross-cultural quality of life measurement instrument that has been widely field-tested and translated into 19 different languages (WHO, 2004b). Cronbach's alpha values for the WHOQOL-BREF for the four domains (physical and psychological health, social relationships and environment) were 0.66 to 0.84 (The WHO Quality of Life Group, 1998). The physical health domain loads most heavily while the social relationships domain comprising three items loads the least (physical = 0.84, psychological = 0.75, social = 0.66, environment = 0.80), (Skevington, Sartorius, Amir, & The WHOQOL-Group, 2004). With respect to convergent validity correlation the findings correlated with the WHOQOL-100 ranging from 0.89 to 0.95 (The WHO Quality of Life Group, 1998). The WHOQOL-BREF will be most useful in studies that require a brief assessment of quality of life e.g. in large clinical trials and in the assessment and evaluation of treatment efficacy (Eljedi, Mikolajczyk,

Kraemer, & Laaser, 2006; Hwang, Liang, Chiu, & Lin, 2003; Saxena, Carlson, Billington, & Orley, 2001; Skevington et al., 2004; WHO, 2007g).

In its development, the WHOQOL-BREF-THAI was first translated by Dr. Chawin Sirinak and colleagues at the Ministry of Public Health (WHO, 2004c). After the first translation into Thai, the WHOQOL-BREF-THAI was further developed by Dr. Suwat Mahatnirunkul and colleagues at Ministry of Public Health by way of revising the content for each item. The content then was retested for meaning and understanding among persons with a variety of educational levels (Ministry of Public Health, 2007).

The WHOQOL-BREF-THAI measures perceptions of overall health and quality of life over the past two weeks. It comprises 26 items, two global items measuring overall health and quality of life and 24 items falling under the auspices of four domains: physical and psychological health, social relationships and environment. The seven items in the physical domain (Items 2, 3, 4, 10, 11, 12, and 24) pertain to activities of daily living, sleep and rest, and work capacity. The six items in the psychological domain (Items 5, 6, 7, 8, 9, and 23) ask about physical image, negative and positive feelings, and memory. The three items from the social domain (Items 13, 14 and 25) inquire about personal relationships, social support, and sexual activity. Finally, the eight items within the environmental domain (Items 15, 16, 17, 18, 19, 20, 21, and 22) have to do with participants' financial resources, health and social care in terms of accessibility and quality, and the elders' physical environment. All questions are measured on a 5-point rating scale, ranging from "not at all" to "an extreme amount". Thus, scores on the WHOQOL-BREF-THAI can range from 26 to 130 and the quality of life scores for the low, moderate and high are 26-60, 61-95 and 96-130, respectively (Ministry of Public Health, 2007). Cronbach's alpha values for overall quality of life in the WHOQOL-BREF-THAI are 0.84 (Ministry of Public Health, 2007). Subscale alphas ranged from 0.45, 0.62, 0.64, and 0.67 for social relationships, physical health, satisfaction with the environment and psychological well-being, respectively (Phungrassami, Katikarn, Watanaarepornchai, & Sangtawan, 2004). The validity correlation correlated with the WHOQOL-100-THAI (the other version of the WHOQOL-BREF-THAI) is 0.65 (Ministry of Public Health, 2007).

The WHOQOL-BREF-THAI has been broadly used to measure quality of life patients in clinical patients and among the general population aged 15 and older (Ministry of Public Health, 2007; Phungrassami et al., 2004). The researcher received permission to use the WHOQOL-BREF-THAI in March of 2007 from Dr. Vladimir B. Poznyak, a project manager of the WHOQOL group and Dr. Chawin Sirinak, an expert from the Ministry of Public Health who helped develop and translated the WHOQOL-BREF into Thai (see the permission letters in Appendix M).

The WHOQOL-BREF-THAI questionnaire was provided to participants before the self-help group was established and at the sixth month after the establishment of the self-help group. The WHOQOL-BREF-THAI was provided to participants using the interviewer-administered method for all participants. The researcher and research assistant had read out the questions and recorded their responses. It was estimated that the questionnaire took approximately 15-20 minutes to complete. The WHOQOL-BREF-THAI was tested for internal consistency reliability with participants and the Cronbach's alpha values for overall quality of life of the study were 0.891. Subscale alphas ranged from 0.37, 0.48, 0.80, and 0.82 for physical health, psychological well-being, social relationships, and satisfaction with the environment, respectively.

### **5. The Diabetes Self-efficacy Scale-Thai (DSES-THAI)**

The DSES-THAI was translated from the English version of the Diabetes Self-efficacy Scale (DSES). The DSES is used to measure confidence in being able to carry out diabetes-related self-care activities among type 2 diabetic patients (Rapley et al., 2003). It comprises 18 items in five domains: follow diet, self-treatment when remedial action is required, follow diabetic routines and fit into lifestyle, certainty about self-care, and ability to exercise. The three items within the dietary domain (Items 5, 6 and 9) measured confidence in diet control. The five items pertaining to self-treatment (Items 12, 13, 14, 15, and 16) focused on confidence with blood sugar control, and the four items on routines (Items 1, 2, 17, and 18), measured confidence in managing daily diabetic routines. The four items capturing certainty (Items 3, 4, 7, and 8) asked about uncertainty in managing diabetic regimens. Finally, the two items in the exercise domain (Items 10 and 11) have to do with confidence in exercising (Rapley et al., 2003).

Each item is measured on a 6-point rating scale ranging from “strongly disagree” to “strongly agree.” Hence, scores of diabetes self-efficacy can range from 18 to 108. The self-efficacy scores for the low, moderate and high are 18-48, 49-79 and 80-108, respectively. Cronbach’s alpha for the total 18-item DSES scale was 0.82. The subscale alphas ranged from 0.75, 0.72, 0.72, 0.76, and 0.61 for routines, self-treatment, certainty, diet, and exercise, respectively (Rapley et al., 2003). The researcher received permission to use and translate the DSES into a Thai version in March of 2007 from its developer, Dr. Pat Rapley, an expert at the School of Nursing and Midwifery at Curtin University of Technology in Australia (see the Letter of Permission in Appendix M).

#### **The process of back-translation and content validity the DSES-THAI**

The original English version of the DSES was translated into Thai by the researcher following the Brislin’s model of translation (Yu, Lee, & Woo, 2003). The DSES-THAI was then reviewed to assure the appropriateness of language usage by an expert in geriatric nursing at the Department of Medical Nursing of the Faculty of Nursing at Mahidol University in Thailand. The reviewed Thai version of the DSES-THAI was back-translated into English by a bilingual Thai-English speaker, an expert in community health nursing at the Department of Community Health Nursing of the Faculty of Nursing at Mahidol University who had not seen the original English version of the DSES. The back-translation used the method of blinding; the translator was unfamiliar with the original English version to assure that the meaning of the DSES-THAI version would be adequately reflected in the back-translated version (Yu et al., 2003). At this stage, the back-translated version of the DSES was compared to its original version for both linguistic congruence and cultural relevancy by an English native speaker who is an expert in linguistics at the English Language Center of Mahidol University (see the lists of experts in Appendix N).

The content validity of the DSES-THAI was deemed appropriate and inappropriate items representative of the content domain definitions (Grant & Davis, 1997) by a panel of five experts including: (1) an expert in diabetes and health promotion at the Department of Maternal and Child Nursing, Faculty of Nursing, Mahidol University; (2) an expert in self-efficacy and instrumentation development at the Department of Maternal and Child Nursing, Faculty of Nursing, Mahidol

University; (3) an expert in community and gerontological health nursing at the Department of Community Health Nursing, Faculty of Nursing, Mahidol University; (4) a diabetic physician specialist at the Endocrine Unit, Phramongkutklo Hospital, Thailand; and (5) a diabetic nurse specialist at Diabetic Center, Siriraj Hospital, Thailand (see the lists of experts in Appendix N).

A content validity index (CVI) across expert scores was calculated by the proportion of experts who scored items as relevant or representative with either a three (the item needs minor revisions to be representative) or four (the item is representative), (Grant & Davis, 1997). The initial average CVI of the 18-item DSES-THAI was 0.77. After revising some items following to the suggestions of the experts, the final average CVI was 0.96. After getting the ethical approval of the MU-IRB, the DSES-THAI was used to test for internal consistency reliability for the five domains of total items with 30 rural-dwelling Thai elders with type 2 diabetes who met the same characteristics as the participants, living at another rural village in the Bang Pa Han District. Inter-item correlations will be used to assess relationships among items and the satisfied Cronbach's alpha values of the total items should be higher than 0.7 (Polit et al., 2001). If the Cronbach's alpha values are less than 0.70, the least loading items will be revised for wording. In this study the Cronbach's alpha values for the 18-item DSES-THAI were the accepted standard at 0.86. The DSES-THAI was also used to test for internal consistency reliability with 20 rural-dwelling Thai elders with type 2 diabetes, the participants of this study, and the Cronbach's alpha values was 0.91. The subscale alphas ranged from 0.98, 0.99, 1.00, 1.00, and 1.00 for self-treatment, routines, certainty, diet, and exercise, respectively.

The DSES-THAI questionnaire was provided to participants before establishment of the self-help group and at the sixth month after establishing the self-help group. The DSES-THAI was provided to participants using the interviewer-administered method for all participants. The researcher and research assistant had read out the questions and recorded the answers of the respondents. It was estimated that the questionnaire took approximately 10-15 minutes to complete.

## **6. Fasting blood sugar levels**

Fasting blood sugar was the indicator used to measure participants' blood glucose levels after 6-8 hours of fasting. At the diabetic clinic before breakfast, participants

were tested for their fasting blood sugar levels from a blood capillary at a finger by a public health official using a blood monitor named “*dextrostrix*”. Participants who had been diagnosed with uncontrolled diabetes would have fasting blood sugar levels of more than 126 mg/dl (American Diabetes Association, 2004). The researcher had asked permission to record their fasting blood sugar levels from a chart review of the diabetic clinic and the participants’ booklets.

### **Data Collection Procedure**

Before conducting the data collection procedure, the researcher selected a registered nurse from the primary care unit of the rural village to serve as the research assistant because of her experience in providing health services for the participants. As a resident in the village, she had gained a good understanding of the participants’ problems and that was important for facilitating the self-help group. The registered nurse was trained to help the researcher record gathered information including observing and field note taking during focused group discussion. The data collection procedure of the study proceeded through cycles of participatory action research process of planning, acting, observing, reflecting, and revising the plan through a self-help group process. Each process has been described below.

#### **1. Planning for the self-help group**

Planning is the initial stage of participatory action research wherein the researcher and participants identify the problem and the desire for change to solve the problem (Speziale & Carpenter, 2003). Planning in this study was aimed at building a rapport with the participants and stakeholders including the participants’ family members, teachers, monks, the sub-district administrator, the village volunteers, and nurses of the community health center working at the participants’ village in the Bang Pa Han District. The disadvantaged conditions that hindered self-care ability and quality of life among participants were identified while building rapport. The objectives of the study to enhance self-care ability and quality of life among participants through a self-help group were also announced. The details were as follows:

1.1 Two months before establishing the self-help group, the researcher built rapport with the participants and their family members, the abbot of the temple, the headmaster of the school, the sub-district administrator, the village volunteer, a

registered nurse and public health officials of the primary care unit at the participants' village by visiting them at their homes and other public places such as the primary care unit, the sub-district office, a temple, school, weekend market, and grocery store. The researcher also came to join the participants during the time of engaging in community activities such as religious and funeral ceremonies.

1.2 While building rapport, the researcher talked with participants and stakeholders about disadvantaged conditions perceived by them as obstacles affecting health and quality of life, especially diabetes management. Thereafter, the objectives of the study to enhance self-care ability and quality of life among participants through a self-help group were announced. The self-help group process that group members came to participate in the group activities at group meetings for mutual aid was explained.

## **2. Acting to conducting the self-help group**

Acting in the participatory action research process included implementing activities for the research process (Speziale & Carpenter, 2003). Actions in this study pertained to holding every group meeting. All 20 participants participated in every meeting. Group size was 20 persons. Two hours was anticipated for length of the meeting. The dates and times of the meetings were scheduled on a 2-week basis with the participants' agreement. The place for the meetings was also selected by the agreement of participants and the researcher. Snacks and drinks during the group meeting were provided by the support of the researcher and a village volunteer for group members throughout the project. Group discussing among members followed to the discussion guides. The tentative procedures and activities of each meeting have been presented in Table 3.1.

Table 3.1 Procedures and Activities for Group Meetings

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
<b>Meeting 1</b>	<ol style="list-style-type: none"> <li>1. To build a rapport among participants.</li> <li>2. To give knowledge and understanding about establishing a self-help group meeting based upon participatory action research principles.</li> <li>3. To identify the participants' problem/ issues related to diabetes management.</li> </ol>	<ol style="list-style-type: none"> <li>1. To start the meeting, the participants and researcher introduced themselves to the group.</li> <li>2. The researcher oriented the participants on working collaboratively to form a group with simple words and explained the researcher's role as a member, consultant and facilitator for seeking necessary materials.</li> <li>3. The members expressed how they felt at that stage about overall health and quality of life and their diabetes management. Participants talked about their inability to fully engage in self-care, dissatisfaction with quality of life and disadvantageous conditions in managing diabetes. The researcher, as group facilitator asked about self-care barriers and things the wanted to change to overcome such conditions, following the discussion guide for the first meeting.</li> </ol>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
		<p>Participants actively talked about their problems and illiteracy. They wished to have their blood glucose in control, and more money to seek more effective health care service in Bangkok. Collected information was recorded in a memo, field notes and audiotape-recording for further detailed content analysis.</p>
	4. To reflect the meeting process.	<p>4. At the end of group meeting, participants discussed how well the running process of this meeting and the changes that should be made for the next meeting. Discussion guides for asking participants at the end of the meeting were used.</p> <p>Participants were satisfied with the meeting and agreed to select the group leader at the next meeting. Gathered information was also recorded in a memo, field notes and audio tape recordings for further detailed content analysis.</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
<b>Meeting 2 (1<sup>st</sup> month)</b>	<ol style="list-style-type: none"> <li>1. To define goals of the self-help group.</li> <li>2. To select the group leader.</li> <li>3. To set the meeting schedules and places.</li> </ol>	<ol style="list-style-type: none"> <li>1. The members defined possible group goals and norms in relation to, for example, how group members could communicate to show respect and support for one another.</li> <li>2. The members selected the group leader and defined the function and responsibilities of that leader. The group members had been informed that every member had the opportunity to act as a group leader. In this group meeting, the researcher served as a facilitator or consultant.</li> <li>3. The members set up the dates, times, duration, and place for subsequent meetings. Transportation for those living far away was also arranged by the researcher and other members who have private vehicles. The meeting places were selected on the basis of privacy, security, and sufficient space to allow for exercise, group speakers and meals. Other group activities were</li> </ol>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	4. To reflect the meeting process.	<p>also performed, while activities such as visiting members who were ill at home and in hospital were conducted to provide support and encouragement.</p> <p>4. At the end of group meeting, the members discussed the overall process of the meeting in terms of outcome evaluation and the changes to be made for the next meeting.</p> <p>Participants were satisfied with the meeting schedules and group leader selection. They selected topics of interest for the next meeting. Gathered information was recorded by a memo, field notes and audio tape recordings for further detailed content analysis.</p>
<b>Meeting 3</b>	1. To determine a list of topics of interest for discussion in the group meetings.	1. The participants helped the researcher to identify their knowledge gap related to their diabetic management e.g. dietary control, medication, foot care and exercise. The researcher provided knowledge related to type 2

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	<p>2. To seek funding to support the group for subsequent meetings.</p> <p>3. To reflect the meeting process.</p>	<p>diabetes.</p> <p>2. Funding support for transportation, snacks and gifts were sought initially by the researcher through the research funding from the Thailand Nursing and Midwifery Council and the Faculty of the Graduate Studies, Mahidol University in the early stages of the self-help group process. Thereafter, the members considered finding funding sources from the community and a private charity.</p> <p>3. At the end of group meeting, the members discussed the meeting and the changes to be made for the next meeting.</p> <p>Participants enjoyed proposing the topics of interest and discussed funding support for snacks. Gathered information was in a memo, field notes, audio tape recording for further detailed content analysis.</p>
<b>Meeting 4 (2<sup>nd</sup> month)</b>	1. To share knowledge related to type 2	1. The members discussed the causes of type 2 diabetes, symptoms,

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	diabetes.	complications, and the goal of diabetic care which was to keep normal blood glucose levels.
	2. To share experiences about diabetic management.	2. The members shared experiences about their management of diabetes, barriers and other health problems.
	3. To provide social support and improve a sense of empowerment and self-efficacy related to the problems of diabetic management among participants.	3. The members discussed ways to solve the problems related to diabetic self-care barriers and health problems.
	4. To reflect any positive changes in how participants manage their diabetes.	4. The members discussed the most important things they had learned and whether they made any changes in how they managed their diabetes, using the guide for discussion at the 2 <sup>nd</sup> month after the self-help group was established (see Appendix F).  Participants talked about diabetes caused by eating sweet foods. They preferred to talk and listen to someone in group

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
		discussion about diabetic management. Gathered information was recorded in a memo, field notes and audiotape-recording for further detailed content analysis.
	5. To reflect the meeting process.	5. At the end of the group meeting, the members discussed the meeting and the changes that should be made for the next meeting.  Participants enjoyed the group process. They had an opportunity to share their experiences about diabetic management and preferred to talk about dietary control for the next meeting. Gathered information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis.
<b>Meeting 5</b>	1. To share knowledge related to dietary control. 2. To provide social support and improve a sense of empowerment and self-efficacy related to problems of	1. The members talked about dietary control and other concerns. 2. The members discussed the problems of dietary control in order to find the solution.

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	<p>dietary control among participants.</p> <p>3. To reflect the meeting process.</p>	<p>3. At the end of group meeting, the members discussed the meeting and the changes should be made for the next meeting.</p> <p>Participants were satisfied with the topic of dietary control and obstacles. They shared suggestions about limiting sweet food consumption and getting exercise. They were satisfied with the meeting and planned to talk about diabetic medication adherence in the next meeting.</p> <p>Gathered information was Recorded in a memo, field notes and audio tape recordings for further detailed content analysis.</p>
<p><b>Meeting 6</b> <b>(3<sup>rd</sup> month)</b></p>	<p>1. To share knowledge related to diabetic medication adherence.</p> <p>2. To provide social support and improve a sense of empowerment and self-efficacy related to the problems of</p>	<p>1. The members talked bout their medication adherence and other concerns.</p> <p>2. The members discussed how to solve the problems of diabetic medication adherence.</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	<p>diabetic medication adherence among participants.</p> <p>3. To reflect the meeting process.</p>	<p>3. At the end of group meeting, the members discussed the meeting and the changes that should be made for the next meeting.</p> <p>Participants shared suggestions for problem-solving about forgetting to take diabetic medication. They enjoyed the meeting and planned to talk about foot care in the next meeting. Gathered information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis.</p>
<b>Meeting 7</b>	<p>1. To share knowledge related to foot care.</p> <p>2. To provide social support and improve a sense of empowerment and self-efficacy related to foot problems among</p>	<p>1. The members examined their feet and shared how to care for feet such as cleansing, cutting nails, detecting foot skin, and exercising the feet.</p> <p>2. The members discussed how to solve the foot problems and other concerns.</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	<p>participants.</p> <p>3. To reflect the meeting process.</p>	<p>3. At the end of group meeting, the members discussed the meeting and the changes that should be made for the next meeting.</p> <p>Participants were satisfied with the meeting. They talked about foot-care methods and wound dressing. They chose to talk about exercising in the next meeting. Gathered information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis.</p>
<b>Meeting 8 (4<sup>th</sup> month)</b>	<p>1. To train the participants in exercising.</p> <p>2. To provide social support and improve a sense of empowerment and self-efficacy related to exercise problems among participants.</p>	<p>1. The members talked about the benefits of exercising and practiced appropriate exercise positions for elders such as walking and moving legs and arms.</p> <p>2. The members discussed how to solve the problems related to their exercising. An exercise plan was then created for each member.</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	3. To reflect any positive changes in how participants manage their diabetes.	<p>3. The members discussed the most important things they had learnt and whether they made any changes in how they managed their diabetes, according to the discussion guide at the 4<sup>th</sup> month after the self-help group was established (see Appendix F).</p> <p>Most participants had decreased blood sugar levels. They shared their experiences of limited eating sweet foods. Some participants talked about how eating bitter herbs decreased their blood sugar. Gathered information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis.</p>
	4. To reflect the meeting process.	<p>4. At the end of the group meeting, the members discussed the meeting and the changes that should be made for the next meeting.</p> <p>Participants were satisfied with the meeting. They discussed the place and time schedule for exercise with the group. Gathered information was recorded in a</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
		memo, field notes and audio tape recordings for further detailed content analysis.
<b>Meeting 9</b>	<ol style="list-style-type: none"> <li>1. To evaluate positive changes about dietary control.</li> <li>2. To provide more social support and improve a sense of empowerment and self-efficacy for some participants who had problems with dietary control.</li> <li>3. To reflect the meeting process.</li> </ol>	<ol style="list-style-type: none"> <li>1. The members shared some positive changes in how they controlled their diabetic diet and barriers.</li> <li>2. The members brainstormed to find ways to solve the problems of dietary control for some members.</li> <li>3. At the end of the group meeting, the members discussed the meeting and the changes that should be made for the next meeting.</li> </ol> <p>Participants appreciated the recommendations received from group. The group helped them deal with their health problems and inspired them to keep control of their blood sugar levels. Gathered information was recorded in a memo, field notes and audiotape-recording for further detailed content analysis.</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
<b>Meeting 10</b> <b>(5<sup>th</sup> month)</b>	<ol style="list-style-type: none"> <li>1. To evaluate the positive changes about diabetic medication.</li> <li>2. To provide more social support and improve a sense of empowerment and self- efficacy for some participants who had problems with medication adherence.</li> <li>3. To reflect the meeting process.</li> </ol>	<ol style="list-style-type: none"> <li>1. The members shared some positive changes in how they managed their diabetic medication adherence and other concerns.</li> <li>2. The members brainstormed to find ways to solve the problems of medication adherence for some members.</li> <li>3. At the end of the group meeting, the members discussed the meeting and the changes that should be made for the next meeting.  Participants enjoyed the meeting and discussed time schedules for visiting some members who were going to have cataracts removed at a hospital. Gathered information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis.</li> </ol>
<b>Meeting 11</b>	<ol style="list-style-type: none"> <li>1. To evaluate the positive changes about foot care.</li> </ol>	<ol style="list-style-type: none"> <li>1. The members shared some positive changes in how</li> </ol>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
		they cared for their feet and other concerns.
	2. To provide improved sense of empowerment and self- efficacy for some participants who still have foot problems.	2. The members brainstormed to find ways to solve the problems of foot care for some members.
	3. To reflect the meeting process.	3. At the end of the group meeting, the members discussed the meeting and the changes that should be made for the next meeting.
		Participants were satisfied with the meeting and planned to have leisure activities by traveling with the group to another province. Gathered information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis.
<b>Meeting 12 (6<sup>th</sup> month)</b>	1. To reflect positive changes about exercising.	1. The members shared changes in their exercise plans and barriers.
	2. To provide more social support and improve a sense of empowerment and self- efficacy for some participants who still had	2. The members brainstormed to find ways to solve the problems and barriers of exercising for some members.

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
	<p>problems with exercise.</p> <p>3. To reflect the benefits of social support and gain positive changes in how participants managed their diabetes and their perceptions of quality of life.</p>	<p>3. The members discussed how to solve foot problems for some. The hindering issue was discussed for participating in the self-help group for six months, which resulted in some positive changes about quality of life and in how they managed their diabetes, following the discussion guide focused on group discussion at the 6<sup>th</sup> month after the self-help group was established (see Appendix G). Gathered information was recorded in a memo, field notes and audiotape-recording for further detailed content analysis. During this time, the participants completed the survey questionnaires of the WHOQOL-BREF-THAI and DSES- THAI by the interviewer- administered methods, their fasting blood sugar levels from a chart review were also recorded to compare with the prior results. Rewards were then given to all members who were</p>

Table 3.1 (continued)

<i>Meetings</i>	<i>Objectives</i>	<i>Procedure and activities</i>
		able to control their blood glucose levels at near to normal levels by the researcher.
	4. To sustain a successful self-help group.	4. The members discussed successful and obstacles for running the self-help group. The hindering issue was discussed for an agreeable solution. Further customary meetings with active participation are necessary. New members are very welcome. The participants think participating in the self-help group was helpful to them, they continued the participation by themselves and the researcher and the registered nurse of the primary care unit were the consultants.

### **3. Observing the self-help group process and its consequences**

Observation is a method of data collection while conducting the study and has ongoing impact (Speziale & Carpenter, 2003). Observation in this study involved the process of gathering information by observation throughout the research. The observation helped the researcher better understand the self-help group processes and the consequences of the changes related to self-care ability and quality of life of participants after participating in the self-help group. The details of this step in the study were as follows:

3.1 The researcher acted as a participant observer to understand the process of events and the progress of behaviors as they occurred naturally (McKernan, 1996). Participant observation can reduce stress and embarrassment, and facilitate behavior change among participants (Morse & Richards, 2002) because the researcher took on the role of group member and simultaneously observed the participants' behaviors and environment by watching, listening and learning what took place during group meetings. In doing so, the participants were likely to feel more relaxed.

3.2 The observation guide (Appendix H) to be used throughout all self-help group activities and in focused group discussion at every meeting was provided for each meeting. The guide offered cues to collect themes reflecting the phenomena of disadvantaged conditions, scenes of participating in the self-help group and manners of some changes in self-care ability and quality of life among participants. Field notes and memos were used to document all observations using the actual words of the participants (Polit et al., 2001). The observations of these cues were recorded in memos and field notes for further detailed content analysis.

#### **4. Reflection on the self-help group**

Reflection is a retrospective assessment of the progress that has been made in the research process and used as a means of gaining insight. In particular, the researcher and participants discussed what were happening with their project (Speziale & Carpenter, 2003). The reflecting process will be performed after each action is taken (Kemmis & McTaggart, 1990). Reflections in this study pertained to an evaluation of the self-help group process at every meeting by focused group discussion about how participating in the self-help group affected any changes in their lives and the management of their diabetes. The factors that made the self-help group progress and what factors were barriers. The details were as follows:

4.1 At the end of every meeting, the researcher and participants discussed about the self-help group activities and helpful and changes for the next meeting. Hence, asking group members about how well they worked together, benefits gained from participating in the group and what they would like to change in order to further improve group progress was recommended. Collected information was recorded in memos, field notes and audio tape recordings for further detailed content analysis. Approximately half an hour was anticipated for the completion of this process.

4.2 At the second and fourth month following the date the self-help group was formed, the researcher and participants discussed things they had learnt and any changes in how they managed their diabetes. Collected information was recorded in a memo, field notes and audio tape recordings for further detailed content analysis. Approximately half an hour was anticipated for the completion of this process.

4.3 At the sixth month following the date the self-help group was formed, the researcher and participants discussed issues related to participants' thinking about what participating in the self-help group had been like for them and what they had found useful from participating in the self-help group. Collected information was recorded in audio tape and transcribed verbatim in preparation for further detailed content analysis. Field notes were taken to document non-verbal responses such as the gestures, facial expressions and tone of voice of the participants during focused group discussion. These responses were typed in preparation for further detailed content analysis. During this time, the survey questionnaires of the WHOQOL-BREF-THAI and the DSES-THAI were provided to the participants again by using the interviewer-administered method. Participants' fasting blood sugar levels from a chart review were also recorded for further findings of improvement on their diabetic self-care ability and quality of life after participating in the self-help group for six months.

### **5. Revising the plan**

The plan was revised based upon the agreement of the participant and the researcher to collaboratively working again in a cyclic of planning, acting and observing in order to improve the research process (Carson et al., 1989). After conducting the self-help group for six months, the participants and researcher also discussed about the benefits gained from this study. The discussion may mention whether the self-help group process achieved the goal and met the participants' needs and whether the process required revision. If the participants prefer adding more revisions, the revised planning for successfully conducting the self-help group will then be discussed. The revised plan will then be used to take action again until all parties are satisfied. For example, the participants and researcher might concern revising the process for recruiting additional group members. The additional newcomers could be elders with type 2 diabetes living in the same village as the

participants and they may attend diabetic clinics with other health services such as community or provincial hospital.

### **Protection of Human Subjects**

Before conducting the study, ethical approval was sought from the committee on human rights related to human experimentation of Mahidol University. Prior to data collection, the informed consent form and participant information sheet were obtained and implemented in the recruitment process. Hence, participants were informed of the overall purpose of the study, potential risks and benefits, time required for participation, and the right to withdraw at any time. Most participants were awkward about literacy, so the researcher read the information out to all participants and explained the content in the informed consent form.

As part of gaining informed consent, the researcher also asked permission of participants to audio tape record the interviews. The audio tape was kept secure in a locked place by the researcher and immediately erased after transcription and checking. The contents of the interview transcriptions will also be kept confidential in a locked place by the researcher at office at the Faculty of Nursing, Srinakharinwirot University, Nakhonnayok Province for five years before destruction. The transcriptions will only be accessed by the researcher and it will not be possible to match participants' interview or personal information with the informed consent form. The researcher also sought permission of the participants to ask for the results of the participants most recent blood glucose levels from a chart review at the community health center of the rural village in the Bang Pa Han district.

Participants were also informed of their rights to refuse to answer any questions making them feel uncomfortable and assured that their participation did not affect the care they received at the diabetic clinic or any other health services in any way at all. To ensure anonymity, all data collected and the SPSS file was not contained any identifying information other than a number. The names of participants and their numbers were kept in a locked place separated from the data. The researcher also did not report the name of the participants' village and primary care unit of the village in published writing or in presentations of this study.

The focus on collaborative work between the participants and researcher in participatory action research may bring pressure upon participants to maintain

membership in the group. Therefore, the researcher observed patterns of non-attendance and reminded those members not attending regularly that they were free to withdraw if they felt unable to continue, so they would not experience pressure to continue participation in the self-help group.

### **Data Analysis Plan**

The data analysis in this study consisted of both qualitative and quantitative analysis. The details were as followings:

#### **1. Qualitative analysis**

The collected data from the audio tape-record transcripts, field notes and memos were analyzed with content analysis. Content analysis involves an interpretation of the meaning of qualitative data and comprises four processes: code, sub-category, category, and theme (Graneheim & Lundman, 2004; McKernan, 1996). The researcher had read all of the transcripts, field notes and memos several times as a whole and then coded in terms of the meaning of each word. The various codes were compared based on differences and similarities and sorted into sub-categories and, then, the groups of similar or identical sub-categories were sorted into categories. The tentative categories were discussed in terms of the meaning. Finally, agreed upon categories were formulated into themes.

#### **2. Quantitative analysis**

The quantitative data in this study were gathered from the personal information sheet, the WHOQOL-BREF-THAI and DSES questionnaires, and the fasting blood sugar levels from a chart review. Raw data from the instruments were inputted into a data file using SPSS version 17.0. Basic descriptive statistics, more specifically, these consisted of frequencies, percentages, means, standard deviations, and ranges (Wagner, 2007), were used to describe participant characteristics or socio-demographics.

The survey instrument scores measuring the participants' quality of life, self-care ability and fasting blood sugar levels from a chart review were analyzed the changed scores through the paired-samples *t* test (the assumption of normality was tested to be reasonable before analysis) to see if there are significant increases in outcome variables of interest in this study before and after participating in the self-help group.

## Research Trustworthiness

The qualitative research findings of this study should be as trustworthy as possible. The use of concepts for describing trustworthiness differs between qualitative and quantitative research. Within quantitative research, the concepts of validity and reliability are common. In qualitative research, however, rigor is a demonstration of the legitimacy of the research process using three areas of trustworthiness criteria: credibility, dependability, and conformability (Graneheim & Lundman, 2004; Lincoln & Guba, 1985; Polit et al., 2001; Speziale & Carpenter, 2003; Tobin & Begley, 2004; Whyte, 1991).

### 1. Credibility

Credibility (comparable with internal validity in quantitative research) refers to confidence in the truth of the data and how well data and the processes of analysis address intended focus by prolonged engagement, persistent observation, peer debriefing, member checks and triangulation (Graneheim & Lundman, 2004; Lincoln & Guba, 1985; Polit et al., 2001). For prolonged engagement and persistent observation, a sufficient period of time (six months for this study) was allowed for both interviews and observations to notice the improvement of self-care ability and some lifestyle adjustments among participants (Rapley et al., 2003). Peer debriefing is checking in with an expert who is experienced in the phenomenon being studied (Davies & Logan, 2007; Polit et al., 2001). In the process of content analysis, the researcher asked the experts in the qualitative research of Faculty of Nursing at Mahidol University in Thailand for feedback on both the interpretation and understanding of the terms in all transcripts, field notes and memos in an attempt to seek agreement in their meaning. For member checks, the researcher confirmed her interpretation of all transcripts with the research assistant and participants.

Triangulation is another technique for using multiple referents to enhance credibility (Polit et al., 2001; Sagor, 1992; Tobin & Begley, 2004). In this study, the researcher used *data source triangulation* by gathering information from multiple data sources, e.g. interviewing the participants and their family members and a registered nurse about the same topics such as barriers to diabetic management. The researcher used the *method triangulation* by using multiple methods to address information, i.e. group interviews, observations, field notes, memos, survey questionnaires, and a chart

of fasting blood sugar levels from a chart review. This study also fulfilled the *investigator triangulation* by using more than one person to collect, analyze, or interpret a set of data (Polit et al., 2001). The researcher, researcher assistant, participants, and experts of the qualitative research all assisted in the collection, analysis and interpretation of data. However, the diversity of data collection in both qualitative and quantitative data collection, and the analytical strategies of this participatory action research study is a time-consuming process. Time pressure can also affect research rigor in terms of having insufficient time enough to thoughtfully accomplish the reflection process for effective data analysis. In this way, the researcher spent six months for data collection and two months for the data analysis which would be a sufficient amount of time to achieve the purposes of the study.

## **2. Dependability**

Dependability (comparable with reliability in quantitative research) refers to data stability over time and conditions (Polit et al., 2001). It is achieved through a process of auditing to ensure that the research process is logical, perceptible and clear wherein others can also critique the data collection methods and data interpretation (Tobin & Begley, 2004). The research process in this study was carefully described so that the auditing of the process and interpretations were facilitated. Experts in qualitative research from the Faculty of Nursing at Mahidol University were asked to audit both the process of data collection and interpretation.

## **3. Confirmability**

Confirmability refers to neutrality or the absence of bias of data wherein two or more people agree about its meaning (Davies & Logan, 2007; Polit et al., 2001). It is concerned with establishing the interpretation of findings as non-imaginative and that the interpretation connects with the data collected (Tobin & Begley, 2004). The interpretations of the audio tape recorded transcripts of this study were discussed with 2-3 participants to seek their confirmation of the accuracy of the interpretations.

## **CHAPTER IV**

### **RESULTS**

This chapter presented the results of the effect of participating in the self-help group on self-care ability and quality of life among rural-dwelling Thai elderly with type 2 diabetes. The first section described the socio-demographic characteristics of the participants. The second section provided details related to collaborative working among the participants and the researcher through the self-help group process. The third section then showed the results from statistical analysis to determine the effects of participating in the self-help group on self-care ability and quality of life among participants. The last section offered greater details from content analysis to explore perceptions of participants about their experiences and how participating in the self-help group affected their self-care ability and quality of life.

#### **Socio-demographic Characteristics of the Participants**

Data gathered from personal information questionnaires presents the numbers of participants for this study as comprising 20 persons with 3 males (15%) and 17 females (17%). Participants had average age 66.5 years, most of them (95%) were aged between 60 and 75 years and only one person was aged 80 years. All participants were Buddhist and most of their education levels (95%) were at the primary level of formal schooling. Approximately half of the participants (55%) reported their work status as household work and half of them had average incomes of 2,000-4,000 baht per month. Nearly half of the participants lived with 2-3 family members. Most participants (45%) had developed type 2 diabetes 5-10 years. The primary care unit was the primary level of health service which participants most often used (95%) and nearly half of the participants (45%) were taken to the health service center by their family members or neighbors. Most participants (75%) were under the public health insurance called the Universal Coverage Card. Further details have been provided in Table 4.1.

Table 4.1 Socio-demographic Characteristics of the Participants ( $N = 20$ )

<i>Personal Information</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative Percent</i>
<b>Gender</b>			
Male	3	15.0	15.0
Female	17	85.0	100.0
<b>Age</b>			
60-75 years	19	95.0	95.0
76 years and older	1	5.0	100.0
Mean = 66.5, Min-Max = 60-80, $SD = 5.643$			
<b>Religion</b>			
Buddhism	20	100.0	100.0
<b>Education Level</b>			
No education	1	5.0	5.0
Primary level	19	95.0	100.0
<b>Work Status</b>			
Agriculture	9	45.0	45.0
Household work	11	55.0	100.0
<b>Income per Month</b>			
Less than 2,000 Baht	3	15.0	15.0
2,000-4,000 Baht	10	50.0	65.0
4,001 Baht and over	7	35.0	100.0
Mean = 3375.0, Min-Max = 1200-5000, $SD = 1175.574$			
<b>Number of Family Member</b>			
Live alone	1	5.0	5.0
2-3 persons	9	45.0	50.0
4-5 persons	7	35.0	85.0
6 persons and over	3	15.0	100.0

Table 4.1 (continued)

<i>Personal Information</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative Percent</i>
<b>Time since Diagnosis of Diabetes</b>			
Less than 5 years	7	35.0	35.0
5-10 years	9	45.0	80.0
11-20 years	3	15.0	95.0
21-30 years	1	5.0	100.0
<b>Health Service Mostly Used</b>			
Primary care unit	19	95.0	95.0
Community hospital	1	5.0	100.0
<b>Transportation Used to Go to the Health Service</b>			
Drive by oneself	3	15.0	15.0
Drive by family members or neighbor	9	45.0	60.0
Car services	6	30.0	90.0
Walk	2	10.0	100.0
<b>Health Service Payment Method</b>			
Health welfare	5	25.0	25.0
Universal Coverage Card	15	75.0	100.0

### **Establishing the Self-help Group among Participants**

This section described the collaborative working between the participants and researcher through the self-help group process. Information related to general atmosphere during group the group process, procedures and activities in group meetings, the characteristics and behaviors of each group member during group participation, and necessary elements for building and maintaining the self-help group were also provided.

### **1. The initial period (the first two months after the group was established)**

In the early stages of group development, the researcher was the leader. As the group became more established around one month, leadership was sought from all members. The new leader was a member who was respected by the group. He was an accepted person with vigorous speech and was better in reading and writing than others. As such, the researcher then took on the role of a group member and was asked to serve as a facilitator and assistant with planning, problem-solving and resource brokering. The researcher also provided advice for possible group goals and norms in relation to participants' needs. For instance, the goals were to improve quality of life and diabetic management related to self-care. The norms focused on common manners for participating i.e. to sincerely pay respect and support for one another. The definite prohibitions were selfishness, self-disclosure and inactivity.

The group typically met twice a month. The first meeting was on the diabetic clinic day (the second Thursday of the month) at the primary care unit and the second was on the last Friday of the month at the sub-district office. At the primary care unit, the participants participated in meetings during the time they waited for treatments and oral medications from a physician of the community hospital from 7:00 a.m. to 9:00 a.m. For the meeting at the sub-district office, the participants participated in meetings from 3:00 p.m. to 5:00 p.m. The meeting places were comfortable and private with 20 members and the need for a possible party and exercising. Transportation for members living far away was arranged by the researcher and other members who could provide their vehicles. Even though 20 members made group discussion rather dense, the group preferred to discuss as a single group. During the initial meetings, snacks and water were served by the researcher at break times. One month later, one village volunteer and one of the participants' relatives provided food such as boiled-rice, fried-rice, coffee, and fruit juice throughout the five-month period. Most members were energetic and amused. They all participated with a polite and composed manner and each member showed respect and offered constructive comments, while supporting one another during meetings.

During group discussion, members expressed their feelings about their ability to manage diabetes, their health and quality of life, disadvantageous conditions to fully engage in self-care, and the things that they wanted to change to improve such

conditions. Most members complained they were unable to control their blood sugar to nearly normal levels. They observed their health in that, if their blood sugar was rapidly decreased, they would be ill. They did not agree with the limited sweet eating following healthcare providers' recommendations. They had to eat some sweets; otherwise they would have less energy for work. None of the members were very satisfied with their quality of life. They always reminded themselves that they were poor elderly people who suffered from a costly disease like diabetes. They thought their quality of life would be improved if they had more money. Then they could purchase more quality diabetic foods such as fresh fruits and vegetables. They would also have enough money for the expenses of transport to access more effective health services in Bangkok. Their minimal incomes depended upon support from their adult children. Even though they were proud of the support, they were also often left alone during the daytime and sometimes at night. Their adult children had to go out to work at jobs in the industrial sectors surrounding the village. As such, participants always felt lonely and had no one to take care of them for day-to-day activities such as diabetes management and transport to health services. One participant felt so hurt about fewer opportunities to be a village volunteer because he was weak in reading and writing. Some participants expressed difficulty in accessing information related to diabetes knowledge and self-care. They explained that healthcare providers did not talk much about the causes of diabetes; they just blamed them when their blood sugar levels were higher. The recommendations provided were to limit sweet, salty and fatty intake which was a difficult task for the participants to practice. All participants disagreed with the suggestion because sweet, salty and fatty tasting foods were the foods regularly eaten in their families. They felt unhappy eating tasteless food. Several participants complained about suffering from huge swarms of mosquitoes that made them have allergic skin as they scratched the wounds from the bites and several adults died of Dengue fever. Occasionally, the sub-district administrator was concerned about this. Most participants were upset about transport in the village. They said it was not convenient to get around if they had no personal vehicle. Public transportation was not available and motorbike taxis were too expensive.

The distressing conditions they faced were poverty, illiteracy, less support for daily activities from adult children, and less opportunities to access effective health

services, even the problems of home environments; participants thought only one person alone could not do much. If they made efforts as a group, they probably had more power to negotiate for receiving things to lead the life they wanted. For example, the group may have asked healthcare providers to spend more time educating them about diabetes knowledge and management. The group would ask for pesticide sprays from the sub-district administrator regarding the issue of the mosquitoes. At the end of discussion, all members were satisfied of being group members. All 20 participants came to join with every meeting. The meeting went well and the atmosphere was completely companionable. Members preferred to talk about their difficulties with one another. They felt better to talk with someone who was in the same situation. For further meetings, members considered tentative topics of interest related to knowledge about diabetes and their diabetic management.

## **2. The second period (the 3<sup>rd</sup> - 4<sup>th</sup> month after the establishment of the group)**

During discussion, group members shared their experiences, knowledge and information related to diabetic management with one another other. The group also provided recommendations to members who had self-care barriers and other problems. The initial topics were the causes of type 2 diabetes, its symptoms and complications, and the goal of diabetic care which was to control blood sugar levels. Members also shared experiences about their management of diabetes, barriers and other health problems. It was likely that the knowledge and experience of the diabetic management differed among group members. Some members did not know much about the causes of their diabetes. They thought the sweet urine resulted from eating too many sweets. Some thought their diabetes may have been hereditary. One person knew about this well. She understood that her diabetes was associated with the disturbance of her pancreas in old age. She always limited eating sweet foods and controlled body weight by riding a bicycle to go shopping at the market.

In terms of diabetic management discussion, the group determined topics of interest pertaining to dietary control, medication adherence, foot care and exercise. Problems, experiences and recommendations related to those topics were shared among members. For example, most members could not avoid eating sweet and salty foods. The group recommended that those foods could be eaten, but not in high

amounts and also suggested trying to eat more vegetables followed by exercise. Members complained that they often forgot to take their diabetic tablets before breakfast. The group suggested that they write down some reminder words on the kitchen door and this really worked. Members also learned to determine the condition of their feet and skin. One member asked for advice for dry skin on her feet. She told the group that she had always suffered with dry skin and itchy feet. Her foot skin was full of scratching wounds. The members who had had this experience advised her to moisture the skin with skin cream and try to wear socks all the time. Members also talked about the benefits of exercising and demonstrated suitable positions for elders such as walking and moving the legs and arms. One member told the group that he had created equipment for exercising his arms and shoulders at home. He taught the participants how to make it with a rope and a cylinder. The group agreed to exercise three times a week, on Mondays, Wednesdays and Fridays. The group selected a small park in front of the sub-district office as the place for exercising. The time for exercising took approximately half an hour from 5:00 p.m. to 5:30 p.m. During the initial period, one retired public health official of the primary care unit and a village volunteer were pleased to be the trainers. They had created equipments such as lumber and elastic belts that made exercising easier for the elders.

Members also discussed the most important things they had learnt and whether they had made any changes in how they managed diabetes. Most responses sounded like positive changes. For example, most members were able to control themselves by eating fewer sweet foods; however, they negotiated for some sweet fruits which they preferred to eat following meals. Several members were happy with their decreased blood sugar levels. A few members still had unsatisfactory levels. The group had recommended them to continue dietary control and they probably achieved subsequent satisfactory levels. Some members shared recipes for dietary control. One member suggested that members drink a kind of bitter herb juice. He told the group he drank it as if he were drinking water around 4-5 glasses per day and his blood sugar levels were decreased. No one forgot to take a diabetic tablet before breakfast anymore. They reminded themselves with writing some words on the kitchen door following the recommendation from the group. The one who had problems with her foot skin told the group that her foot skin was better; it was moister and less itchy than before. All

members enjoyed exercise using the equipment aids of lumber and elastic belts. The equipment helped them to move their arms, legs and waist more easily.

During meeting evaluation, members told the group that they preferred helpful recommendations received from the group. Group helped them deal with their health problems and inspired them to keep control their blood sugar levels. The most important thing members had learnt from the group was to exchange their knowledge and suggestions with others. They expressed that they were very proud of themselves to have helped other members solve their health problems. They hoped that they would receive subsequent helps from the group for future problems. To promote more group involvement, members said that meeting activities needed be more interesting, fun and attractive. For future meetings, the group agreed to provide opportunity for each member to take turns to share some positive changes about how he/she controlled his/her diabetes and barriers.

### **3. The last period (the 5<sup>th</sup> - 6<sup>th</sup> month after the establishment of the group)**

At group discussion, each member took turns to share more about their positive changes and difficulties in their diabetic self-care. One member told the group that she could eat less sweet and salty foods at every meal. She had solved the problem of tasteless food not being her family's preference by separating food dishes for her alone. She was satisfied with her last blood sugar levels. The member who received advice to drink bitter herb juice was also pleased with her decreased blood sugar levels. Some members told the group that they had not gone to exercise with the group during the time of the last flood, but had exercised alone at home. The sub-district administrator joined the group once and announced a free service for cataract extraction to the members provided by the Ministry of Public Health. Two members made the decision to have the cataract extraction at a hospital in the city. The members who had experienced the cataract removal advised them about eye care. Some members feared to have the cataract removal and worried they may lose their eyesight. The ones who had had experience told them do rest as much as possible after the removal and avoid doing some household tasks that might affect their eye healing for three months. Their eyesight was still fine. On the day that the two members were admitted for cataract extraction, some members went to visit them at the hospital. The group also had the opportunity for a leisure activity. They went to

make merit at nine temples in the province of Nakorn Pathom and this trip was supported by the village fund.

At the last meeting, the members discussed benefits gained from participating in the group for six months. Most of them were satisfied with their fasting blood sugar levels. The researcher congratulated them with a gift like a towel. Most members said they felt their lives to be more meaningful than before. They enjoyed their lives and were satisfied with their health. The group had supported them with very helpful suggestions. Their positive changes in diabetic management were caused by a sense of inspiration received from members who had had the same experiences. All members liked the atmosphere of companionship during discussions. Some members said they preferred to talk about their health problems in the group than in their families. Members also discussed their successes and obstacles for running the group. Most of them were satisfied with the group management. The thing they really worried about was how to sustain this success. The hindering issue was discussed for an agreeable solution. The group agreed to keep up further customary meetings in an active manner. Some members negotiated with group to have meetings just once a month at the diabetic clinic. They had to take care of their grandchildren during the daytime. This was agreeable among group. As such, the group planned further meetings once a month on the diabetic clinic day. There were exercising in group on Mondays, Wednesdays and Fridays for available members where other people were very welcome. The group also invited new members to join. The researcher told the group that she and the registered nurse of the primary care unit would be pleased to be consultants wherein the researcher would keep in touch and occasionally join them at the diabetic clinic of the primary care unit.

### **Effects of Participation in the Self-help Group**

This section showed the results of statistical analysis to see the effects of participating in the self-help group on self-care ability and quality of life among the participants. After testing the assumption of normality that appeared to be reasonable (see Appendix O), the participants' quality of life, self-efficacy and fasting blood sugar scores were analyzed the changed scores through the paired-samples *t* test to see significant increased in outcome variables before and after participating in the self-help group.

**1. Participating in the Self-Help Group Significantly Increased Self-Care Ability among Participants**

Paired samples statistics showed the mean score differences of diabetes self-efficacy before and after participating in the self-help group. The mean score for the diabetes self-efficacy after participating in the self-help group was 87.40, while before participating it was 60.20 (see Table 4.2).

Table 4.2 Comparing Mean Scores Difference for Diabetes Self-efficacy before and after Self-help Group Participation

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
Diabetes Self-efficacy (before)	20	23	86	60.20	18.752
Diabetes Self-efficacy (after)	20	41	108	87.40	13.531

Paired-sample *t* tests showed the average difference between *the before and after* and diabetes self-efficacy scores was 27.200. The standard deviation of the difference was 15.900. The 99% confidence interval for the average difference was from 17.029 to 37.371. The *t* value was 7.651 and the *p* value was 0.0001. From Table 4.2, it appeared that diabetes self-efficacy scores increased after participating in the self-help group. Therefore, there were significant increases in diabetes self-efficacy scores among the participants after participating in the self-help group (see Table 4.3).

Table 4.3 Comparing Mean Scores Difference for Diabetes Self- efficacy before and after Self-help Group Participation

	<i>Diabetes Self-efficacy before) - Diabetes Self-efficacy (after)</i>
<i>Paired Differences</i>	
Mean	27.200
Std. Deviation	15.900
Std. Error Mean	3.555
99% Confidence Interval of the Difference	
Lower	17.029
Upper	37.371
<i>t</i>	7.651
<i>df</i>	19
<i>Sig.</i> (1-tailed)	.000

## **2. Participating in the Self-Help Group Significantly Decreased Fasting Blood Sugar Levels among Participants.**

Paired samples statistics showed the mean score differences of fasting blood sugar levels before and after participating in the self-help group (see more details of fasting blood sugar levels among participants in Appendix O). The mean score for the fasting blood sugar levels after participating in the self-help group was 127.50; before participating, it was 151.80 (see Table 4.4).

Table 4.4 Comparing Mean Scores Difference for Fasting Blood Sugar before and after Self-help Group Participation

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>
Fasting Blood Sugar (before)	70.00	253.00	151.80	20	49.026
Fasting Blood Sugar (after)	75.00	180.00	127.50	20	30.695

Paired-sample *t* tests showed the average difference between the *before and after* fasting blood sugar scores was 24.300. The standard deviation of the difference was 36.487. The 99% confidence interval for the average difference was from .959 to 47.641. The *t* value was 2.978 and the *p* value was 0.004. From Table 4.4, it appeared that fasting blood sugar scores decreased after participating in the self-help group. Therefore, there were significantly decreased fasting blood sugar scores among the participants after participating in the self-help group (see Table 4.5).

Table 4.5 Comparing Mean Difference for Fasting Blood Sugar before and after Self-help Group Participation

	<i>Fasting Blood Sugar (before) – Fasting Blood Sugar (after)</i>
<i>Paired Differences</i>	
Mean	24.300
Std. Deviation	36.487
Std. Error Mean	8.159
99% Confidence Interval of the Difference	
Lower	.959
Upper	47.641
<i>t</i>	2.978
<i>df</i>	19
<i>Sig.</i> (1-tailed)	.004

### 3. Participating in the Self-Help Group Significantly Increased Quality Of Life among Participants

Paired sample statistics showed the mean score differences of quality of life before and after participating in the self-help group. The mean score for the quality of life after participating in the self-help group was 93.40, while this score was 84.65 before participating (see Table 4.6).

Table 4.6 Comparing Mean Scores Difference for Quality of Life before and after Self-help Group Participation

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
Quality of Life (before)	20	57	100	84.65	10.589
Quality of Life (after)	20	71	116	93.40	11.339

Paired-sample *t* tests showed the average difference between the *before* and *after* quality of life score to be 8.750. The standard deviation of the difference was 5.609. The 99% confidence interval for the average difference was from 5.162 to 12.338. The *t* value was 6.977 and the *p* value was 0.0001. From Table 4.6, it appeared that quality of life scores increased after participating in the self-help group. Therefore, there were significantly increased quality of life scores among the participants after participating in the self-help group (see Table 4.7).

Table 4.7 Comparing Mean Difference for Quality of Life before and after Self-help Group Participation

	<i>Quality of Life (after) – Quality of Life (before)</i>
<i>Paired Differences</i>	
Mean	8.750
Std. Deviation	5.609
Std. Error Mean	1.254
99% Confidence Interval of the Difference	
Lower	5.162
Upper	12.338
<i>t</i>	6.977
<i>df</i>	19
<i>Sig.</i> (1-tailed)	.000

### **Perceptions of Participation in the Self-help Group**

This section explored perceptions of participants by which participating in the self-help group affected positive changes in their self-care ability and quality of life. These perceptions were derived from interview transcripts, field notes and memos using the content analysis method. Content analysis is the process of identifying, coding, and categorizing the primary patterns in the data (Graneheim & Lundman, 2004; McKernan, 1996). To begin coding, the researcher read all of the transcripts, re-read, highlighted sections of the text, and made comments for points of interest. After coding, the data were ready to be categorized. Going through the data again, the researcher looked for specific words used or ideas participants expressed. The researcher also sought the meaning of specific passages within the context of all of the data and determined an appropriate category. The researcher then cut out highlighted sections of the text within a computer program and grouped them into categories in

separate files. The researcher used the four themes of self-help group mechanisms in literature review to guide categories of data findings. The interpretation of qualitative findings is as follows:

### **1. Gained culturally-sensitive knowledge**

Participants gained the knowledge and information the group provided. Most participants said they understood more about the causes of type 2 diabetes than before. The group offered them very helpful knowledge and information. The explanations provided by group peers really made sense. They knew they had less education, so they felt it was easy to listen to their friends talking about how to self-manage the diabetes. They know that self-care is the best of diabetic management. The comments that reflected the understanding in knowledge and information received from the group among the participants was as follows:

*This self-help group is very nice. I received helpful knowledge and information from the group. I only finished grade four, I read only simple words and look at pictures in the newspaper. I don't know what caused my diabetes. Right now, the causes of diabetes make sense. I know that when we grow old, our pancreas also gets older and cannot work well, so it's tired to absorb some sugar we eat, so our blood is loaded with sugar and shows high scores at the diabetic clinic.*

*In the past, I didn't know much about what I could do to control my disease. I just tried to limit eating my favorite sweets and my blood sugar levels were still high. I learned from the group that I have to limit sweet fruits, rice and other kinds of snacks made of flour. I have to exercise several times a week. Because of the knowledge received from the group, my blood sugar levels are decreased now.*

*I understand everything my group friends said. We are living with a chronic disease, diabetes, and self-care is the best way to control our disease. We shared experiences about our self-care with one another. It is pretty good to sit and listen to personal narratives related to diabetic management from friends. I can apply this knowledge to better control my blood sugar levels.*

Participants believed the knowledge and information the group recommended could manage their diabetes. After the group discussed using bitter vegetable foods to control blood sugar levels, most participants also believed that eating bitter foods could neutralize their high blood sugar. Some participants took turns talking to the

group about their experiences in using bitter foods to control their blood sugar. They also told how to cook bitter vegetables for dinner. One participant was interested in drinking bitter juice, which was made from a certain type of bitter vegetable. She also told the group she was satisfied with her last blood sugar levels. She believed her decreased blood sugar was a result of the bitter juice. A few comments indicated that participants believed in the knowledge and information received from the group as follows:

*We have sugar in our blood; you know that we have to eat some kinds of bitter foods. I believe bitter foods can decrease the sweetness in the blood.*

*Yesterday I cooked sour curry for dinner. You know vegetables like drumsticks and grad floras are usually bitter. Don't worry; it's very delicious if we use it to make sour curry.*

*I drink 4-5 glasses of bitter gourd juice every day in the mornings and evenings. It's not troublesome to make. You just boil the whole bitter gourd, including its shell, vine, leaves, and flowers and drink its bitter juice. After only one month, my blood sugar decreased. This was something the group told me*

Participants admitted that the knowledge and information shared among group members was suitable for their situation. They were able to apply the knowledge gained to manage their diabetes in their day-to-day lives. For example, participants preferred the exercise positions the group created. They felt exercising by the moving arms and legs to be appropriate for them. One participant advised group peers to make equipment composed of a rope and a cylinder to exercise the arms and shoulders at home. On exercise day, the participants enjoyed using lumber and an elastic belt to exercise their arms, legs, shoulders, and waist. Comments among participants that represented their acceptance are as follows:

*I think exercising by just moving the arms and legs is enough for my old age. I can do this at home several times a day. My granddaughter asked me to dance to music like an aerobic style. I told her I'm too old to do that; actually I was shy.*

*I made a device to exercise my arms and shoulder. I made it from rope and a cylinder. It's very simple; you tie the cylinder with rope and hang it from the ceiling. When you want to exercise, you just pull the end of the rope by taking*

*turns changing your arms, right and left. I do this around 500 times a day; it's good for the heart*

*I usually go to exercise with the group every time. It's a very good idea to use lumber and an elastic belt for exercising the arms, legs, shoulder and waist. The last time it flooded, I couldn't exercise with the group. I did it alone at home; I remembered the positions created by the group.*

Knowledge and information gained from the group also affected quality of life for the participants. Several participants were more satisfied with themselves than before. They had used knowledge, information and skills to manage their diabetes. Their success in controlling their blood sugar was derived from following the group's recommendations. Participants had enough energy for exercising with the group because the positions for exercising created by the group were suitable for their old age. After exercising, some participants reported they were relaxed and able to sleep well. Participants' comments that represented their satisfaction with health are shown below:

*I am satisfied with myself now. I'm so happy my blood sugar was slightly decreased after I drank some juice made from bitter gourd. Someone in our group told me about this. At first, I didn't believe it was possible until someone in the group confirmed a good result.*

*My legs are stronger than before. The group told me exercise is good for the health, so I often walk to buy food at the grocery store. I want to exercise my legs.*

*Exercising with the group has made me stronger than in the past. As you know, I tried after I walked for 10 minutes. Right now, I can exercise for half an hour without taking a break. I think moving the arms, legs and waist is good for elders. It's easier to use lumber and an elastic belt as equipment aids. After exercising, I feel invigorated and get a good sleep.*

One participant felt his life to be meaningful when another participant reported that his suggestion about drinking bitter juice had made her blood sugar decrease.

*I prefer to share my knowledge with the group. I felt my life to be meaningful when my friend was able to control her blood sugar by drinking bitter gourd juice as I suggested.*

## 2. Received social support

Participants reported that they received supportive behaviors from their group peers. The group offered them both advice and comments. Participants reported that talking with peers who provided both advice and comments had increased their self-confidence to engage in self-care behavior. Support from the group included meal preparations, exercise methods, herbal remedies and general health care. Comments that represented participants had self-confidence to manage diabetes as follows:

*Last month, I mostly ate salted fish with boiled rice every week, so my high blood pressure went up. I talked to the group and someone told me to eat less salt e.g. steamed fish or fried vegetables. I didn't mind as I already separated my meals from the others in my family. I tried to eat less salty foods. Although I don't like it, it's OK if it's good for my health.*

*You know, at first, I didn't know how to exercise my legs. I couldn't stand still with my single leg when it moved until he told me to make the equipment aid of a rope and cylinder for exercising my arms and shoulders. For me, I have no problem about exercising my arms and shoulders. I think my legs are too weak to exercise, so I created a bar to grab while I moved my legs and that's fine.*

*My friend said my foot wound was not good. She advised me to dress the wound with a kind of herb powder melted with some mortar. I dressed it the way she told me. It's incredible; my wound was dry.*

*The group told me not to let my blood sugar drop too low, because last month it was very low at 70. I sometimes feel dizzy and can't walk upstairs, so I always have a bottle of syrup downstairs. I drink it whenever I don't feel good.*

Some participants thought having a group of friends was a good thing. They felt they weren't alone with diabetes; they had friends to share willpower to control their blood sugar and other diabetic management. Comments that represented participants had willpower to manage diabetes are as follows:

*I'm not the only one with diabetes; I have friends. It's our group; we share willpower with one another. I'm not the only one with high blood sugar; other people in the group also get that. We will motivate one another to limit eating some sweet snacks.*

*Last month my blood sugar was high at 207. I didn't feel very good and sort of dizzy. Someone in group told me I didn't have to worry about that. She said I*

*may have a problem with my blood circulation. She advised me to drink water and hurry back home to get some rest. At that time I felt really good and had will power.*

The social support received from the group has also affected the quality of life of the participants. Some participants said they were satisfied with themselves. They had better health that was derived from supportive behaviors among group peers. For example, one participant said she was able to limit eating sweet fruits once she realized that reminders were related to dietary control during the discussion.

*I like myself; my health is quite good right now. I have more control of my blood sugar than before. I don't eat many things such as whole oranges-only half is enough. I think about what we discussed in the group.*

Most participants expressed that they felt their stress disappeared when they talked with group friends. They preferred to talk about their health problems to the group and also listened to others' stories. Comments that represented decreased stress among participants caused by supportive behaviors received from the group are as follows:

*I feel very good to release my stress by talking about my health problems with the group. I also had a fractured hipbone several years ago. It happened because I didn't know how to take care myself at that time; I went to see a doctor after my hipbone had already been repaired. So, nowadays I have a problem with my walking.*

*I enjoy talking to my group friends. I feel relaxed and have decreased stress. We talk about cooking sour curry for dinner.*

*I prefer listening to other people's stories; everyone has problems. So I feel my stress decreases. I also exercise with the group at the sub-district office every time. My blood sugar isn't high, but stable at 70, 90 and 82 this month.*

Exercising and traveling with the group gave the participants an opportunity to enjoy life. The participants said they enjoyed exercising with the group, because the exercise positions created by group were simple and did not take much time. One participant stated that she preferred to travel with the group, because she had no

chance to travel with her family. Comments that indicated how participants enjoyed with their lives are as follows:

*I enjoy exercising with the group. It's fun to exercise with friends. The exercise positions are very simple. I'm not too tired to do them. It takes only about half an hour.*

*I enjoy traveling with the group. I'd have no chance to travel to other provinces alone. My son hasn't got much time to take me there; he has to work every day.*

Two participants who had had cataracts removed said they felt their lives to be meaningful when the group went to visit and take care of them at the hospital. The comments indicating the feelings of meaningful lives among the participants are as follows:

*On that day, my friends in our group went to visit me at Suppamit Hospital. That time I felt my life to be meaningful. At the time, my daughter couldn't stay with me, she had an overtime job. One of my friends stayed to take care of me all day.*

*I came here to have a cataract removal alone. My friends visited me here. They helped me carry stuff and drive me to my home. I feel I have a meaningful life.*

Several participants reported they were in good moods after they had participated in the group. They were able to accept their lives with diabetes. Having friends living with diabetes made them feel less anxiety. Dialogs that represented supportive behaviors from the group and improved psychological health among the participants are as follows:

*I'm in a good mood now, truly. Why should I have to worry about anything? Everyone in our group has to live with diabetes. We are the same, aren't we?*

*Right now, I don't feel nervous like in the past. I don't worry about the fluctuations of my blood sugar. Several persons in the group have had an experience like this and I know how to deal with it.*

Social support from peers also improved their quality of life in terms of personal relationships and transport. Participants reported that staying in the group gave them more opportunities to join other activities in the village than they had alone. For

example, they had a chance to participate in a religious ceremony about making merit like nuns at the temple.

*The group offered me a chance to join other activities in my village. I wouldn't dare to join in the nun ceremony at the temple alone. I feel reluctant to stay with other people with whom I am not acquainted for three days.*

The participants were also satisfied with the support they got from their friends. They thought it was a sense of companionship. They got news and information in day-to-day life from the group.

*I preferred all support the group provided. It's a companionship, isn't it? During the meetings, I also get news and information in my everyday life. I know who died today and what the funeral time is.*

One participant was satisfied with her transport supported by a friend. The person who had a private vehicle drove her to the community health center on the diabetic day.

*One of my group peers is very nice; he picks up me here from my home. It's early in the morning and the sky is still dark. I don't dare to wake my son up. He's usually worked overtime the night before. You know, at 5 o'clock in the morning I can't find a motorbike taxi. And, even if there is one, it's so expensive—at least 50 Baht.*

### **3. Perceived a sense of empowerment**

The participants stated that the group was able to enhance a feeling of self-control. Recommendations and information shared among peers helped them have greater control over their diabetes. They were confident in their ability to manage their diabetes. They felt sure about using what they knew about diabetes self-treatment every day. For example, if they had high blood sugar levels, they would plan to exercise more often than usual and were able to limit their favorite foods. They could make decisions about when to see their healthcare providers about problems with their feet. Comments that participants stated how they were able to control their diabetes are as follows:

*I know what to do if my blood sugar gets high. Today my blood sugar is high at 214. I haven't ridden my bike for several days; there's so much rain this month. Anyhow, I think about group reminders, and exercise should be performed continuously. So I try to exercise arms and legs at home.*

*It's good to exercise everyday; my obese stomach can be reduced. I can eat the same amount and exercise everyday; some days I work in the garden, water and plant trees. My blood sugar is not high; it's been 102 and 104 for two months.*

*I exercise every day. Even when there was flooding, I walked in the water to move the trees and some things. I also created some exercise positions such as shaking my arms and legs while turning my head and neck.*

*I didn't eat much since my friend told me I had gained one kilogram. My children bought me so many favorite foods. I just ate a bit, and didn't worry. The group told me to keep strength of mind and not eat much, especially the favorite foods.*

*Last time someone in group told me my foot wound was not good. I had scratched it until it was inflamed. This time, the wound at my foot is good. I went to see an official at the primary care unit and had it dressed 2-3 days.*

The participants used group meetings to join with peers. They also shared knowledge and suggestions to help the people who had health problems and other concerns. The time of this successful problem-solving contributed to a powerful feeling among them.

*I feel I'm a dominant person when I give an advice to someone. It's like I'm proud of myself. One of my group peers consulted me, because she had increased blood sugar at 144 from 128 last month. She said she hadn't eaten much rice-only some oranges when she was dizzy. I told her it was because the oranges made her blood sugar increase. I recommended her to drink 4-5 glasses of bitter gourd juice a day and her blood sugar was 116 this month.*

*I feel powerful to help someone in the group plan for controlling her blood sugar. I advised her to control sweet foods. She doesn't have to completely cut down the sweets. She can eat some when hungry, but not much-only taste them. If it's a cracker, just two pieces.*

*I felt great to propose the idea of writing down the reminder words on the kitchen door in order to remember taking a pill after breakfast. No one forgets it anymore.*

Receiving a sense of empowerment also affected the quality of life of the participants. The group provided situations that encouraged and supported members to have the lives they wanted. Some participants stated that the group provided opportunities for them to listen and care for others about understanding and managing their diabetes.

*Having a group is good for me. I listen and talk to others. When I'm home, I always think about what I got today. It's doesn't matter for me; I can control my blood sugar. This month it's 111; the last two months were 104. Even my son when bought me some grapes, my favorite fruit, I ate only a bit.*

*Last month, I played bridge and drank cold coffee everyday; my blood sugar was more than 200. The group advised me to limit drinking coffee, so I made a decision to give up playing bridge and drinking coffee. This month I got 147.*

A sense of empowerment enabled participants to search for health services, enjoy leisure activities and manage their home environments. Comments that represented this empowerment among participants are as follows:

*This morning the sub-district administrator announced at our meeting that anyone who wanted to have cataract removal should inform him. It's a free service by the government. I mean, he is concerned about us when we're a group. I don't know if we would have convenience like this if we weren't in a group. You know what I mean?*

*Last month, we went to make merit at nine temples in Nakhorn Pathom Province. Our group received this support for a bus service from the village fund. Only one of us alone may not get a chance like this.*

*There are numerous mosquitoes in our village and our skin is full of bites. Ten adults in our village have died of dengue fever. We can deal with these massive mosquitoes by asking our villager leader for help. We've convinced others to destroy enormous used tires by using them as flowerpots and we rarely see mosquitoes now.*

#### **4. Perceived self-efficacy**

Participating in an environment of listening and sharing knowledge, experiences, suggestions and problem-solving among group peers enhanced a sense of self-efficacy to fully engage in self-care behaviors. One participant expressed that the group motivated her to perform regular exercise. When she heard a group peer told her she was able to exercise with the group, she made greater effort to do so.

Recommendations received from friends also increased efforts to deal with the high blood sugars levels that confronted the participants. They were sure they would be able to follow their diabetic diet every day. The group also provided an atmosphere of motivation. The successful diabetic management of the group peers aroused feelings of ambition among the others. When the participants saw a person in the group was able to control her blood sugar well and received words of admiration from the group, they also tried to do too the same. Comments that reflected the influence of motivation from the group are as follows:

*In the past, I feared to exercise. I had a problem with my knees and they couldn't be flexed. I couldn't sit on the floor, only chairs; it was so terrible. Someone in the group told me to calm down and advised me to massage my knees with a kind of hot balm as often as I could. When my knees were better, she told me to slowly walk around my home. This time I had no problem with my knees. I got to exercise with the group every time. Thanks to her for the advice and motivation.*

*I always got bored of myself when my blood sugar was increased. My group friends asked me what I ate. I told them I often ate bananas and perhaps jackfruit after meals; I have so much of these things at home. Yesterday, I ate two pieces of sweet potato because I was hungry. My friends told me I can eat those things, but just a bit, and they will ask me about my blood sugar next month. I answer to myself; nobody at home pays attention to me like this.*

*We discussed sweet fruits that we often eat every day. Most of us thought about bananas, because every home has likely planted them. We agreed to eat bananas in less amounts and look for other kinds of less sweet fruit. We are sure we can do it every day.*

*We have motivation among group friends. The persons who have decreased blood sugar will be admired and the ones who haven't will try harder next time.*

*I see my friend has controlled her blood sugar well. She only eats a half pill and has gotten blood sugar levels of 101-104 all along for 8-9 years. Our group praised her as a typical person, so I wish to be praised like her.*

*I enjoy motivate myself to get a decreased blood sugar with my friends. If someone gets increased blood sugar, we'll have a laugh and the one who has decreased blood sugar levels will be praised.*

The group promoted the extent of conforming. The participants affirmed that they had done regular exercise because they saw others do so. They felt confident to

do exercise with the group and reluctant to exercise alone. One participant said she felt different from others when she had increased blood sugar level while others had decreased levels.

*I enjoy exercising with the group at the sub-district office every time. I am shy to exercise alone, I'm elderly. I'm shy of my children; they will laugh at me and say I'm acting like a teenager.*

*I feel confident to do the same things as others. Our group is a group of diabetic elders, isn't it? The group exercise and so do I. When the group traveled, I was there, too.*

*Last month, my blood sugar level increases while most of the others decreased. I felt different from others. My friends asked me what I ate and I didn't dare to tell them anything. Thereafter, I intended to control my blood sugar. I hope I will have decreased blood sugar like the others.*

Receiving a sense of self-efficacy also affected the quality of life of the participants. In terms of psychological health, self-confidence increased when participants struggled with the difficulties of their exercise and dietary control and were motivated by friends to overcome such difficulties.

*I'm satisfied with my life now; my legs are stronger than before. I feel confident to walk around and exercise with the group. I thought my legs were too weak to exercise until the group told me I could.*

*This month, my blood sugar decreased. I feel confidence. I'm similar to others. The group motivated me to limit eating sweets and exercise everyday.*

Perceptions of participants that participating in the self-help group affected positive changes in their self-care ability and quality of life are summarized in Table 4.8.

Table 4.8 Summary of Perceptions of Participating in the Self-help Group

<i>Benefits Gained from the Group</i>	<i>Positive Changes</i>	
	<i>Self-care Ability</i>	<i>Quality of Life</i>
<b>Gained culturally-sensitive knowledge</b>		
Understanding	Understand knowledge and information in managing diabetes, i.e. causes of diabetes, how to control blood sugar: exercise, limiting sweets.	Receive knowledge and information for day-to-day lives.
Belief	Belief in using traditional remedies to control diabetes, i.e. eating bitter foods to decrease blood sugar.	Satisfy self and feel that life is meaningful.
Acceptance	Accept knowledge and information as suitable for use in day-to-day life, i.e. positions in day-to-day life, i.e. positions and equipment aids for exercise created by the group.	Sufficient energy to exercise, feel invigorated and sleep well.

Table 4.8 (continued)

<i>Benefits Gained from the Group</i>	<i>Positive Changes</i>	
	<i>Self-care Ability</i>	<i>Quality of Life</i>
<b>Received social support</b>		
Self-confidence	Self-confidence to manage diabetes in day-today life, i.e. control diabetic foods, create equipment aids for exercise, dress wounds, and deal with low blood sugar reactions.	Satisfy self and enjoy life. Have a chance to join activities with friends.
Willpower	Have willpower to manage diabetes, i.e. deal with high blood sugar reaction. Provide willpower to friends.	Decreased stress, anxiety and nervousness. Feelings of relaxation and life to be meaningful. Satisfied with having support from friends, i.e. news, information, and transportation.
<b>Perceived a sense of empowerment</b>		
Self-control	Self-control in managing diabetes and feeling certain about using what they learned to self-care.	Have a sense of control and ability to make decisions.

Table 4.8 (continued)

<i>Benefits Gained from the Group</i>	<i>Positive Changes</i>	
	<i>Self-care Ability</i>	<i>Quality of Life</i>
Power	Feel powerful to share knowledge and advice with others, problem- solving skills to manage.	Ability to search for health services, leisure activities and manage home environment.
<b>Perceived self-efficacy</b>		
Motivation	Motivation to increase effort to deal with self-care barriers and following diabetic routines with the person who succeeds, i.e. exercising, dietary control.	Increased self- confidence and satisfaction with life. Increased sense of control over one's life.
Conformity	Conform to friends in doing self- care, i.e. exercise.	Increased self- confidence by doing and having things like others.

## **CHAPTER V**

### **DISCUSSION**

This chapter presented discussion related to the findings of this study. The first section determined socio-demographic characteristics among participants. The second section explored the collaborative work among the participants and the researcher through the self-help group process. The third section examined the results from the statistical analysis of positive effects of participating in the self-help group on self-care ability and quality of life among participants. The fourth section discussed the perceptions of participants about how experiences in participating in the self-help group had affected positive changes in their self-care ability and quality of life wherein the mechanism of this effect was also explored. The usefulness, strength and limitations of the study were also discussed.

#### **Socio-demographic Characteristics Determination**

This section determined the socio-demographic characteristics of the participants analyzed by descriptive statistics. The participants in this study included 20 persons. The researcher firstly approached and explained the study to 54 elders with type 2 diabetes who received health services at the diabetic clinic of the community health center. There were 20 elders willing to be involved in the study, while participation was inconvenient for others because they had to stay at home to perform household tasks. This number was as initially expected to be suitable to establish a self-help group and perform focused group discussion (Polit et al., 2001). This occurrence was approved by Marram (1978) i.e. the numbers of group members should be 3-20 persons for effective relationships. These participants comprised 3 males and 17 females. This is concordant to the population survey about Thai persons with diabetes in 2000 which found that the prevalence of type 2 diabetes was higher among women and rural-dwelling persons (Aekplakorn et al., 2003, 2006). More than half of the participants were young old aged between 60 and 69 years. This finding is akin to a survey by Mahidol University (2007) in that most Thai older persons were 60 to 79

years old. All of the participants were Buddhist because Buddhism is the religion of almost all Thai people (Kongin, 1998; Thailand Travelers, 2007).

Most of the participants' education levels were at the primary level with four years of formal schooling. This occurrence partly resembled the national survey of the National Statistical Office (2001) which found that more than half of the elders lived in non-municipal areas typically have primary level educations, or six years of formal schooling. The dissimilarity in years of schooling was that typical participants had four years of formal schooling whereas those in non-municipal areas with six years could be explained. Given that the majority of the participants were females living in a rural village, the prevalence of low education was higher among these elders (Ahmad & Isvilanonda, 2003; Knodel et al., 2005). Approximately half of the participants performed only household work since most of the elders was females who took a major role of housewife.

Remarkably, half of the participants had incomes of 2,000-4,000 Baht per month. This incidence is rather dissimilar from the national survey of National Statistical Office (2001) which found that most elders living in non-municipal areas had average incomes lower than 2,000 Baht per month. Information from conversations of people living in the village reported that higher incomes were probably derived from the financial support of adult children who worked at many industrial factories near the village. They paid participants an amount of money for general expenses such as water, electricity supplies, and food preparation. These participants told the researcher that they did not have enough money for saving. This incidence concurred with the study of Knodel et al. (2005) and the report of the National Statistical Office (2005, 2006) which found that a large number of rural elders relied heavily on financial support from their adult children for essential things like healthy food, clothing and transportation. Nearly half of the participants lived with 2-3 family members. The numbers of participants' family members were different from the survey of the National Statistical Office (2005) which reported that half of elders lived alone. As industrial factories existed near the village, many adult children working outside the home still live with the participants.

The primary care unit was the health service center where participants most often used. Since the community and provincial hospitals are located far from the village,

the primary care unit is the only healthcare center providing general healthcare and diabetic clinic services to the village. Nearly half of the participants were taken to the by their family members' or neighbor's because public transportation services are not available in the village. Some participants use personal motorcycles for traveling short-distances and asked for help from the neighbors for long-distance traveling. The method of health service payments used by most participants was the Universal Coverage Card (a formerly 30-Baht Scheme). This card is a free service provided by the government for Thai people aged 60 and older to receive public health services free of charge.

### **Self-help Group Process Exploration**

This section explored the collaborative work between the participants and researcher through the self-help group process. The section also discussed general atmosphere during establishing the self-help group, procedures and activities in group meetings, characteristics and behaviors of each group member during participation the group, themes of discussion and necessary elements for building and maintaining the self-help group. More details of these aspects were elaborated as follows:

#### **1. Establishing the self-help group**

In the early stage of group establishment, the researcher served as the group leader. This was a good opportunity for the researcher to build up initial trust with the participants. As the group became more established after approximately one month, leadership was sought from all participants. This group establishment consumed less time than that revealed in the empirical studies as the group may take as long as 2-18 months to search for a leader (DeCoster & George, 2005; Diabetes Monitor, 2006; Diabetes UK, 2007). The leader of a self-help group in this study was selected because he was highly recognized and respected by the group for his communication skills and good reading and writing. Thereafter, the researcher was more like a member who offered facilities such as a vehicle for transportation and assistance with planning, problem-solving and resource brokering e.g. equipments for exercise. This finding concurred with the study of DeCoster & George (2005) in that healthcare professionals should play the role of facilitator and assistant. The researcher also provided advice to help participants define group goals and norms in relation to participants' needs. Since this time was the initial period of group establishment, the

participants might have insufficient self-confidence to identify their needs. The researcher then guided them in this mission. For instance, the goals were to improve quality of life and diabetic management related to self-care. The norms were derived from agreeable decisions focusing on common manners for participating e.g. to sincerely pay respect and support to one another. These common norms were augmented by the report of DeCoster & George (2005) that it is important for members to be active, polite, open and honest with themselves and one another, while offering constructive comments and support to one another during participating.

## **2. Group activities**

The participants agreed to hold group meetings twice a month. The first meeting held at the primary care unit was on the second Thursday of the month, the same day that the participants attended the diabetic clinic. The second meeting was conducted on the last Friday of the month at the sub-district office. Each meeting took approximately two hours. Two hours for the meeting was an appropriate time period found to be sufficient time for group discussion including time for refreshment break (Barron, 1999; Gamsu et al., 2002; Garrett et al., 2005; Vancouver Health, 2006). The meeting places of this study located at the primary care unit and the sub-district office. Although Grady et al. (2001) did not recommend a primary care unit as a meeting place for privacy, participants agreed to have group meeting here as they thought it was more convenient for most of the group members. Participants were not concerned much about the reduced privacy. They felt fine with the environment around them because other people were also diabetic patients like them.

Since this village had no public transportation, participants were supported about their travel to the meeting places by the researcher and other participants who had personal vehicles. Even though 20 members created a congested atmosphere for group discussion, the participants preferred to get together and talk in a single group. This performance did not follow the suggestion of Polit et al. (2001) that group discussions of approximately 5-15 people is efficient and can generate a considerable amount of dialogue. Refreshments were served by the researcher at the first month of meetings. From then on, a village volunteered and one of the participants' daughters donated some food and refreshments throughout the final five months. This support reflected the acceptance and positive attitude of people toward the principles of the

self-help group. At meetings, participants took turns to share some self-care activities in how they manage diabetes and barriers. From observation, most participants were active and enjoyed the meetings. They all participated with respectful and constructive manners. Each participant offered helpful advice and supported one another during meetings.

### **3. Disadvantageous conditions**

During discussion, participants shared their feelings and experiences related to their abilities to manage diabetes, overall health and quality of life, barriers to engaging in effective self-care, and things they wanted to change in order to overcome such barriers. These conversations reflected disadvantageous incidence perceived by participants. Their speeches sometimes expressed negative ideology about themselves. For example, they thought they were poor elders who suffered from a costly disease like diabetes. Their opinion regarding things they wanted to change also reflected a sense of social inequity. For example, they were poor and had not enough for expenses in seeking for access to more effective health care services. Most participants complained they could not control their blood sugar at nearly normal levels. They knew that they would be ill if their blood sugar was rapidly decreased. One participant told the group that she would suffer with dizziness if her blood sugar level was lower than 130 mg/dl. Participants did not agree with the completely limited sweet eating following healthcare providers' advice. They said that all physicians and nurses were too strict in prohibiting eating all sweets. They believed they had to eat some sweets to refresh themselves and get more energy for day-to-day activities.

Participants were not very satisfied with their quality of life. They always had negative ideology regarding themselves in that they were poor elders who suffered from a costly disease like diabetes. This health problem might make them becoming vulnerable and dependent persons (High & Doole, 1995). This time, participants expressed their opinions regarding the life they wanted and those reflected inequity in society. They thought their quality of life would be better if they had more money. They could get higher quality food and facilities to manage their diabetes. They wished to have enough money for expenses in seeking for access to more effective health care services. Most available community services are not able to provide high quality and specialty care for older people with chronic disease like diabetes

(Pitayasak, 2004; Tiampracha, 2004). Participants were not satisfied with the support from their adult children; they were often abandoned to live alone at home. Their adult children had to go out to work as employees at industrial sectors surrounding the village. As such, participants always felt lonely and had no assistance for day-to-day activities for diabetes management and transport to the hospital or healthcare facilities.

With the effect of having low education levels, one participant was disappointed with his limited opportunities to be a village volunteer. He said that he was embarrassed with his limited literacy as he could read and write in only simple words. Some participants expressed difficulties in accessing information in relation to diabetes knowledge and self-care. They told the group that healthcare providers did not talk much about the causes of diabetes and more reflexive ways to control blood sugar. The healthcare providers only blamed them when their blood sugar levels were increased. The recommendations provided regarding their eating habit were too rigid to follow, such as totally limit of sweet, salty and fatty foods. Participants thought this was too difficult to practice. They did not accept with such recommendations because sweet, salty and fatty foods were their family's taste preferences. They did not like tasteless food simply because they felt fear of conflict in their family. Besides, participants were also troubled with unhealthy home environments from huge swarms of mosquitoes. They all had allergic skin and scratched wounds. They affirmed that ten adults had died of dengue fever and the sub-district administrator was occasionally concerned about this. The participants were also upset with transport in the village because it was not convenient to get around if they had no private vehicles. Public transportation was not available and the fares of motorbike taxis were too expensive.

#### **4. Improved disadvantageous conditions from the participants' views**

The participants expressed their perspectives regarding things that a group could do to improve disadvantageous conditions. With regard to the deprived conditions participants faced e.g. poverty, illiteracy, less support for daily activities from adult children, less opportunities to access effective health services and even problems of home environment; the participants thought only one person alone was not able to make things change. On the other hand, if they were in a group, they probably had more power to negotiate for getting the things for leading the lives they wanted. Regarding less opportunities to access effective health services, the group could ask

for more health education related to diabetes knowledge and management from healthcare providers. This notion was supported by Powell et al. (2001) who found that a group can influence healthcare providers to better serve the health services. In relation to problems of home environment, the group could ask for help from the sub-district administrator in cases of mosquitoes and dengue fever outbreaks. These perspectives established the principle of a self-help group in that group allowed members in the same situations they come together to satisfy common needs and handicap, and further bring about designed social or personal changes (Ben-Ari, 2002; Doohar & Byrt, 2003).

### **5. Meeting reflection**

All participants were satisfied about being group members and they came to join every meeting as scheduled. The meetings went well with a companionable atmosphere. Participants preferred to talk about their difficulties with one another. They felt better to talk with someone who was in the same situation. This sense was supported by the studies of Finn (1999) and Scholten (2006), which found that people in the same situation could share personal stories, express emotions and be heard in an atmosphere of acceptance, understanding, encouragement, support and empathy. Doohar & Byrt (2003) agreed with this perspective in that even though participants were supported by families, people who were similar to participants may always fully understand how participants struggled with self-care barrier in their day-to-day living. The participants told the group that they appreciated the very helpful recommendations received from the group. The group helped them deal with their health problems and inspired them to keep control of their blood sugar levels. The most important things participants had learnt from the group were knowledge sharing and perceived psychological support among each other. They were so proud of themselves to help other members deal with health problems. They hoped they would receive some help from others in the future. To promote group involvement, meeting activities needed to be able to more interesting, fun and attractive to members. This thought confirms the suggestion of the Diabetes Monitor (2006) in that group meetings should be enjoyable and attractive. Further participants discussed the important things they had learnt from participating in the self-help group and they had made any changes in how they managed diabetes as follows.

### **5.1 Gaining knowledge and sharing experiences**

During discussion, participants shared their experiences, knowledge and information related to diabetic management with one another. They also provided guidance to persons who had self-care barriers and other problems. Participants shared experiences about their management of diabetes, barriers and other health problems. There were differences in knowledge and experience with diabetic management among participants. Some participants did not know much about the causes of diabetes. They understood that it is a disease of sweet urine caused by eating too many sweets. Someone related the disease to heredity. Some persons knew well about this. For example, a woman in this group understood that her diabetes was associated with a disorder of the pancreas in old age. She always limited eating sweet foods and controlled her body weight by riding a bike to go shopping for food at the market. The participants determined topics of interest pertaining to dietary control, medication adherence, foot care and exercise. Problems, experiences and recommendations related to those topics were shared among the participants. Someone received advice about caring for dry skin at her feet. She told the group that she had always suffered with dry skin and itchy feet. Her foot skin was full of scratched wounds. One person who had had this experience advised her to cover her skin with skin cream and try to wear socks all the time. Thereafter, the participant who had had problems with her foot skin was satisfied with the moisture and less itchy skin of her feet. This occurrence has shown another benefit of self-help group participation in that the elders could learn how to manage symptoms from information sharing in the group (Scholten, 2006; Schwartz, 2000). The observable facts mentioned above indicated group benefits in terms of allowing members to deal with problems and crises, by having somebody to listen to and exchange experiences through peer contact and support (Gray, 1999; Hellerich, 2001).

### **5.2 Positive changes**

#### **5.2.1 Increased adherence to diabetic regimens**

At an initial period of the first two months of participating in the self-help group, most of the participants could not avoid eating sweet and salty foods. Group peers advised them to eat minimal amounts of those foods, while adding more vegetables and exercise. These advices have been affirmed by several empirical studies which

found that self-help groups enhanced self-care behaviors by changing patterns to better control blood glucose levels (Assuk, 2001; Gamsu et al., 2002; Gilden et al., 1992; Lertprapai, 1996). At the last period of the 5<sup>th</sup> – 6<sup>th</sup> month after establishing the self-help group, most participants were more able to control themselves by eating fewer sweet foods; however, they negotiated for some sweet fruits which they preferred eating after meals. This prevalence was consistent with the study of Garrett and colleagues (2005) and Maxwell and colleagues (1992) in that self-help group is unambiguous to increase feelings of control in diabetes management activities among patients. Several participants were happy with their decreased blood sugar levels; however, a few persons still had unsatisfactory levels. They were still following recommended dietary control continuously with positive thinking that they probably achieved satisfactory levels of blood sugar in the near future. Some recipes for dietary control were shared among participants. One participant suggested the peer group to drink a kind of bitter herb juice to lower blood sugar levels, as he found successful for himself by doing so. One participant was determined to eat fewer sweets and salty foods. She prepared tasteless meals only for herself to avoid conflicts with her family. She was also satisfied with her latest blood sugar levels. The participant who took advice to drink bitter herb juice was pleased with her decreased blood sugar levels in a later month. It seems apparent to support the idea that self-help group can increase self-confidence in setting desirable goals to manage diabetes independently (Adamsen, 2002; Wens et al., 2005).

In relation to the diabetic regimens, the suggestion about medication adherence was really successful. Participants who often forgot to take their diabetic tablets before breakfast were suggested to have some reminder words on the kitchen door and thereafter, no one forgot to take a diabetic tablet before breakfast anymore. This performance demonstrated other benefits of the self-help group in promoting adherence to treatment regimens (Schwartz, 2000; Vancouver Health, 2006).

In relation to exercise, participants also discussed about the benefits of exercise and demonstrated appropriate methods for elders e.g. walking and moving the legs and arms. One person had created equipment for arm and shoulder exercising at home. He taught friends how to make the equipment aid with a rope and a cylinder. This incidence was affirmed by the work of Huang et al. (2005) who found that self-help

groups also encourage older patients to manage their diabetes through increasing involvement in their plan of care and developing greater decision-making capacity for managing their diabetes. Participants agreed to have group exercise three times a week on Mondays, Wednesdays and Fridays. They selected a small park in front of the sub-district office as the place for exercise. The time spent in the exercise was around half an hour in the evening. In the early stage, one retired official of the primary care unit and a village volunteer were pleased to be the trainers. They had created equipment aids such as a piece of lumber and an elastic belt that made exercising easier for elders. All of the participants enjoyed exercising together using the equipment aid that helped them move arms, legs and waist more easily. In this respect, the findings revealed that fostering a self-help group not only provides peer support and information to optimize health outcomes among the participants, but the group can motivate other stakeholders to maximize lobbying about health activities that could better serve the elders' needs. Some participants still continued to exercise during floods. Even though they did not go to exercise with the group, they exercised alone at home. This supports the notion that a self-help group can increase self-esteem for diabetic self-management (Schwartz, 2000; Vancouver Health, 2006).

### **5.2.2 Receiving free health services and leisure activities**

Two participants received free services for the cataract extraction at a hospital in the city provided by the Ministry of Public Health. This occurrence supported the report from the Diabetes UK (2006a) that a self-help group can provide support and information and get participants involved in fund-raising for local services. That time, the participants who had experienced the cataract removal were given advice about eye care. Some participants felt fear to have the cataract removal and worried they might lose their eyesight. The ones who had experience told them to get as much rest as possible after removal and avoid doing some household tasks that might affect their eye healing for three months and their eyesight would be fine. This experience about sharing functions as emotional support has been found to reduce stress and anxiety (Chyun, 2006; Trozzolino et al., 2003). The day that two participants were admitted for cataract removal, some group peers went to visit them at the hospital. In addition, the group also offered participants the opportunity for leisure activities. They went to make merit at the temples in another province and this traveling was supported by the

village fund. In doing so, it has supported the notion that a self-help group can also improve the quality of life of participants in terms of environmental domain which offers opportunities for leisure activities (WHO, 2007b).

### **5.2.3 Improved quality of life**

After participating in the self-help group for six months, most of the participants said they felt their lives to be more meaningful than before. They enjoyed their lives and were satisfied with their health. This occurrence is consistent with the report from the empirical studies of Assuk (2001) and Lertprapai (1996) in that self-help groups promoted the quality of life of older persons. The group supported them with very helpful suggestions. Their positive changes in diabetic management were caused by a sense of inspiration received from persons who had the same experiences. This incident can be explained. Persons with a common experience could share and learn from one another (Ben-Ari, 2002; Lieberman & Bliwise, 1985) for the purpose of discovering strategies for improving their conditions, and helping others while helping themselves (Wituk et al., 2000). The self-help group can also improve the quality of life of participants in terms of psychological health domain (WHO, 2007b). The atmosphere of companionship during the discussions was an atmosphere of acceptance, understanding, encouragement, support, and empathy (Scholten, 2006; Smith, 2002). Some participants said they preferred to talk about their health problems with group instead of with family. Dooher and Byrt (2003) clarified that persons with close family ties in family may not always fully understand that elders struggle with day-to-day living.

## **6. Group Sustaining**

The participants were also really concerned about how to sustain the self-help group. The group agreed to keep holding customary meetings in an active manner. Some participants proposed that the group would have meetings once a month at the diabetic clinic and this was agreeable among group meetings. As such, the group would have further meetings once a month on the diabetic clinic day, the second Thursday of the month, at the primary care unit from 7:00-9:00 a.m. This meeting time was supported by Barron (1999) who found that groups should meet on the same day and at the same time each month to enhance ongoing participation. The group still had exercises three times a week on Mondays, Wednesdays and Fridays at the sub-

district office and other people were invited. The group planned to invite new members to join. This plan is supported by the recommendations of the Diabetes Monitor (2006) which found that members should recruit at least one new participant to promote group involvement. Furthermore, the researcher and the registered nurses of the primary care unit had remained the consultants. The researcher planned to keep in touch and occasionally join the group at the diabetic clinic of the primary care unit.

### **Positive Effects of Participating in the Self-help Group**

This section discussed the results of statistical analysis regarding the effects of participating in the self-help group on self-care ability and quality of life among the participants. Paired-sample *t* tests were used to analyze the results of experiments when the same person is observed under two different conditions in which having a pair of measurements that are matched in some way and one type study based on a “*before and after*” design (Norusis, 2002). Based on this study’s findings, there were positive changes in all study outcomes including participants’ quality of life, self-care ability and fasting blood sugar levels before and after the self-help group participation. Further details were then discussed.

#### **1. Improved self-care ability indicated by increased self-efficacy**

Since self-efficacy is a significant predictor of adherence to self-care (Aljaseem et al., 2001; Bernal et al., 2000), this study self-efficacy was measured to indicate self-care ability among participants. Paired samples statistics showed the average score differences for diabetes self-efficacy before and after participating in the self-help group. The average score for diabetes self-efficacy after participating in the self-help group was 87.40, while the pre-participation mean score was 60.20. Since the low, moderate and high self-efficacy scores were 18-48, 49-79 and 80-108, respectively, it could be concluded that the self-help group participants had average scores of self-efficacy within a moderate level before participating and increased average scores of self-efficacy within a high level after participating the self-help group. Paired-sample *t* tests showed significant differences in mean score of self-efficacy between the *before* and *after* group participation. Similar finding was found in previous research investigating the impact of self-help group participation on self-efficacy among type 2 diabetic elders (DeCoster & George, 2005; Garrett et al., 2005).

## **2. Decreased fasting blood sugar levels**

Paired samples statistics showed the mean score differences of fasting blood sugar levels before and after participating in the self-help group. The mean score of the fasting blood sugar levels decreased significantly from 151.80 at the first month and nearly 126 mg/dl at six months of group participation. Since this study used fasting blood sugar levels of more than 126 mg/dl to identify when the level of blood sugar of the participants was higher than normal, it could be concluded that participants had average scores of fasting blood sugar levels higher than normal before participating in the self-help group and decreased average scores of fasting blood sugar levels that were nearly normal after participating in the self-help group. This finding was consistent with many empirical studies which found that self-help groups enhanced self-care behaviors e.g. changing eating patterns to better control of blood glucose levels among diabetic patients (Assuk, 2001; Gamsu et al., 2002; Gilden et al., 1992; Lertprapai, 1996).

## **3. Enhanced quality of life**

Paired sample statistics showed the average score differences of quality of life before and after participating in the self-help group. The average score for the quality of life after participating in the self-help group was 93.40, while this score was 84.65 before participating. Given that quality of life scores for the low, moderate and high were 26-60, 61-95 and 96-130, respectively, (Ministry of Public Health, 2007), it could be concluded that the self-help group participants had average scores of quality of life in a moderate level before participating, while their average scores of quality of life were slightly increased and still at the same level after participating in the self-help group. Paired-sample *t* test also showed the average difference between the *after* and *before* quality of life scores. It appears that quality of life significantly increased among the participants after participating in the self-help group. This occurrence has associated with the results of empirical studies which found that self-help groups could improve the quality of life of diabetic patients (Chyun, 2006; Gilden et al., 1992).

### **Perceptions about Experiences of Participating in the Self-help Group**

This section discussed perceptions of participants about their experiences of how participating in the self-help group affected positive changes in their self-care ability and quality of life. The mechanism by which better changes in their self-care barriers

and further improvement of their diabetic self-care ability and quality of life occurred among participants was also explored along with categories in four themes derived from content analysis. The researcher then considered the relationships among the categories and connected this with the four themes of self-help group mechanism in literature review. The emerged mechanisms were illuminated as follows:

### **1. Gained culturally-sensitive knowledge**

It has been widely recognized that self-help groups transmit culturally-sensitive knowledge among group members has been affirmed by several studies (Leung, 2004; Resnicow, 2007; Kongphantu, 1992; Woongsook, 1998). Knowledge gained from sharing experiences among participants could be applied to the participants' life condition and enhanced understanding with belief and acceptance among participants. The mechanism of how understanding, belief and acceptance of culturally-sensitive knowledge enhanced better changes in self-care barriers in terms of low education levels and improvement of self-care ability and quality of life among participants were also explored as below:

#### **1.1 Understanding**

Participants understood knowledge and information shared by the group members to manage their diabetes. Most participants had better understanding of the causes of type 2 diabetes than before. They knew that their high blood sugar would cause pancreas dysfunction in old age. The group offered them very helpful knowledge and information. The explanations provided by group peers really made sense. They also knew that they had less education and their reading was not good. So they felt it was easy to listen to their friends talking about how to self-manage the diabetes. As previously stated, low education was viewed as a self-care barrier among participants. In this sense, sharing knowledge among participants living with type 2 diabetes might help them better understand how to manage their illness on their own terms (Ben-Ari, 2002; Lieberman & Bliwise, 1985). For example, an accept of one participant was that "... when we grow old, our liver also gets older and cannot work as well, so it becomes tired of absorbing some sugar we eat. So our blood is loaded with sugar..." Participants were able to apply the knowledge received to better control their blood sugar levels. They knew that self-care is the best of diabetic management. They knew how to control their blood sugar by exercising and limiting sweet food. These

occurrences can be explained. Since culturally-sensitive knowledge exchanges among participants can fit with the common values and beliefs and the ways they think and perceive (Nui, 2005), the understanding of this knowledge has the potential to change behaviors in areas such as diet and exercise adherence among participants (Barton et al., 2005; Watson et al., 2001).

Understanding about knowledge and information gained from the group also affected the quality of life of participants in terms of environmental domain. Participating in the self-help group enhanced participants with greater access to knowledge and information they needed in their day-to-day lives, aligns with the concept of quality of life defined by the WHO (2007b, 2007e). Several participants had used knowledge, information and skills to manage their diabetes. Their success in controlling their blood sugar was derived from following the group recommendations. For example, one participant stated that "...I'm so happy my blood sugar slightly decreased after I drank some juice made from bitter gourd. Someone in our group told me about this..." This statement indicated an opportunity for acquiring new information and skills among participants.

## **1.2 Belief**

The participants believed the knowledge and information the group recommended could manage their diabetes. The participants believed in using traditional remedies to control diabetes, i.e. eating bitter foods to decrease blood sugar. One participant said that, "...You know, vegetables like drumstick and grad flora are very bitter... it's very delicious if we use it to make sour curry. ...". Another said that, "I drink 4-5 glasses of bitter gourd juice every day morning and evening. ...After only one month, my blood sugar decreased. ...". This sense was affirmed by the report of Phromsaard and Rotanaphraiwong (2006) which found that the health systems in rural communities rest on a foundation of self-care fostered through using local knowledge and traditional Thai medicine for treating diseases. After the group discussed using bitter foods to control blood sugar levels, most of the participants also believed that eating bitter foods could neutralize their high blood sugar. This belief was similar to the reports of several studies that Thai elders with type 2 diabetes have controlled their blood sugar by eating large amounts of bitter herbs with the belief that high blood sugar can be neutralized with bitter food (Khon Kaen University, 2003; Pitayacak,

2004; Thaniwattananon, 2001; Tiampracha, 2004). Some participants said that, “We have sugar in our blood; you know that we have to eat some kinds of bitter foods. I believe bitter foods can decrease blood sugar.” Some participants took turns talking to the group about their experiences in using bitter foods to control their blood sugar. They also told how to cook bitter vegetables for dinner. One participant was interested in drinking bitter juice made from a certain kind of bitter vegetable. She also told the group she was satisfied with her last blood sugar levels. She believed her decreased blood sugar had resulted from the bitter juice.

Believing in knowledge and information gained from the group also affected quality of life among the participants in terms of psychological health domain. Participating in the self-help group helped the participants feel more satisfied with themselves and felt life to be meaningful, aligns with the concept of quality of life defined by the WHO (2007b, 2007e). Several participants were more satisfied with themselves than before. One participant felt his life to be meaningful when the other participant reported that his suggestion about drinking bitter juice had made her blood sugar decrease. He said that, “I prefer to share my knowledge with the group. I feel my life to be meaningful when my friend can control her blood sugar caused by drinking the bitter gourd juice I suggested”. It could be implied that using traditional medicine might reflect personal beliefs and thinking among participants.

### **1.3 Acceptance**

Participants accepted that knowledge and information shared among group members were suitable for their situations. They were able to apply the knowledge gained to manage their diabetes in day-to-day life e.g. positions and equipment aids for exercise created by the group. Participants preferred the exercise positions the group created. They felt exercising by moving the arms and legs were appropriate for them. One participant said that, “I think exercising by just moving my arms and legs is enough for my old age. I can do this at home several times a day. My grand daughter asked me to dance to music like an aerobic style. I told her I’m too old to do that. Actually, I was shy”. This incidence was supported by the work of Tiampracha (2004) which found that Thai elders were embarrassed to exercise in public by running, walking, or aerobic dancing, as these are seen as appropriate for teenagers. Thai elder preferred just moving their arms and legs within household boundaries.

One participant advised group peers to make equipment composed of a rope and cylinder to exercise the arms and shoulders at home. On the exercise day, the participants enjoyed using lumber and an elastic belt to exercise the arms, legs, shoulders, and waist. One of the participants said that, "I go to exercise with group nearly every time. It's a very good idea to use lumber and an elastic belt for exercising the arms, legs, shoulders and waist. I couldn't exercise with the group during the last flood. I did it alone at home; I remembered the positions created by the group." This dialogue represented an acceptance among participants that knowledge and information gained from the group fit their situations and could be used in their day-to-day lives.

Accepting knowledge and information gained from the group also affected the quality of life of the participants in terms of physical and psychological health domains. Applying knowledge gained from participating in the self-help group helped participants have sufficient energy for everyday life, getting rest and further bringing about positive feelings, aligns with the concept of quality of life defined by the WHO (2007b, 2007e). One participant stated that, "Exercise with our group has made me stronger than in the past. ...I think moving the arms, legs and waist is good for elders. It's easier to use a piece of lumber and an elastic belt as an equipment aid. After exercising, I feel invigorated and get a good sleep". The comments indicated that participants had sufficient energy for exercising with the group, because the positions and equipment aid for exercising created by the group were suitable for their old age. After exercising, some participants reported that they felt invigorated and able to sleep well.

## **2. Received social support**

As previously stated, the participants were likely to lack family support. They were often neglected to live alone at home during the daytime and perhaps at night, too. Their adult children had to go out to work at jobs as employees in the industrial sectors surrounding the village. Thus, participants always felt lonely and had no assistance for day-to-day activities such as diabetes management and transport to healthcare services. Self-help groups as a form of mutual assistance to resolve common problems could serve as an alternate form of social support as these have been linked with enhanced self-management of diabetes (Ben-Ari, 2002; Nayar et al.,

2004; Gayle, 2005). Social support from the mutual assistance of group peers in this study had fostered increased self-confidence and willpower among participants in managing diabetes in their day-to-day lives. The following delineated the mechanism of having self-confidence and willpower derived from social support of the self-help group.

### **2.1 Self-confidence**

Participants reported that talking with peers who provided both advice and comments had increased their self-confidence to engage in self-care behavior. This report was affirmed by several studies in that having access to persons who provide advice has been found to increase knowledge and self-confidence to engage in self-care behavior among elders with type 2 diabetes (Assuk, 2001; DeCoster & George, 2005; Gamsu et al., 2002; Gilden et al., 1992). Participants reported that they received supportive behaviors from group peers and this support enhanced their self-confidence in managing diabetes in their day-to-day lives e.g. controlling diabetic foods, creating equipment aids for exercise, dressing wound, and dealing with low blood sugar reactions. Some comments as follows represented that the participants had self-confidence in managing diabetes.

*... someone told me to eat only less salt... I separated my meals from the others in my family. I try to eat only low salt foods, even though I don't like them...*

*... he told me to make an equipment aid... I thought about my legs that were too weak to exercise, so I created a bar to grab while I moved my legs...*

*... the group told me no to let my blood sugar get too low... last month, it was very low at 70. I felt dizzy and I couldn't walk upstairs, so I always had a bottle of syrup downstairs. I will drink it when I don't feel good.*

As diabetic management alone can be difficult, the self-help group as a form of social support can help participants increase their self-care ability through the provision of information and encouragement. This illumination is also supported by the report of *Joining People with Diabetes* (2006).

Self-confidence toward managing diabetes resulted from social support the group offered and also affected the quality of life of the participants in terms of psychological health and social relationship domains. Having self-confidence in

managing diabetes in day-to-day life made participants more satisfied with themselves, as they enjoyed life more and had a chance to participate in social activities aligns with the concept of quality of life defined by the WHO (2007b, 2007e). Participants were satisfied with themselves due to the fact that they had better health that was derived from supportive behaviors among group peers. One participant could limit eating sweet fruits when she recognized the reminder related to dietary control during the discussion. This occurrence was similar to the studies of Gleeson-Kreig et al. (2002) and Surit (2001) which found that social support could improve blood sugar control among elders with type 2 diabetes.

Exercising and traveling with the group made the participants enjoy life. They enjoyed exercising with the group, because the positions of exercising created by group were simple and did not take much time. One participant preferred to travel with the group because she had no chance to travel with her family. Some participants reported that staying in the group made gave them more opportunities to join other activities in the village than they would have had alone. One participant explained that “The group offered me a chance to join other activities in my village. I wouldn’t dare to join the nun ceremony at the temple alone. I feel reluctant to stay with other persons I am not acquainted with for three day”. This evidence supported that loneliness and physical disability in older age would be linked to declines in fully engaging in community activities (WHO, 2005), while social connections through helping neighbors could improve health and self-worth, and enable older people to make an active contribution to their community (Becker, 2003; Chappell et al., 2003; Tay et al., 2004; WHO, 1999).

## **2.2 Willpower**

Participants stated that social support from their peers fostered willpower in managing diabetes e.g. dealing with high blood sugar reactions. Participants were taught to provide willpower to friends. Some participants thought having group friends was a good thing and felt they were not alone with diabetes. They had friends to share willpower to control their blood sugar and other diabetic management. Some comments as follows indicated that the participants had willpower to manage diabetes.

*I’m not the only one with diabetes, I have friends. ... we will share willpower*

*with one another.*

*I'm not getting high blood sugar alone; someone in the group also gets that. We will provide willpower to each other to limit eating some sweet snacks.*

*... my blood sugar is likely to be high, 207. I don't feel good likely and sort of dizzy. ... She advised me to drink water and hurry back home to get some rest. At that time I felt really good and had willpower.*

Given that diabetic management requires a strong commitment to self-care and lifestyle change (Gleeson-Kreig et al., 2002), the statements from the participants as above showed that social support from group peers had strong potential to inspire the elders to engage in self-management (Coe & Neufeld, 1999; Gleeson-Kreig et al., 2002; Wilson & Mayor, 2006).

Having willpower to manage diabetes derived from social support group also affected quality of life for participants in terms of psychological health and social relationship domains. Having willpower to manage diabetes led participants to decreased negative feelings and brought about feelings of life as being meaningful and satisfaction with the support they got from friends aligns with the concept of quality of life defined by the WHO (2007b, 2007e). Most participants felt their stress disappeared when they talked to their group friends. They preferred to talk about their health problems to the group and listen to others' stories. Several participants were in good moods after participating in the group. They were able to accept their lives with diabetes. Having friends living with diabetes made them feel less anxiety. At this point, strong support appears to have decreased the incidence of stress (Coe & Neufeld, 1999; Lassey & Lassey, 2001) by improving mood and a sense of companionship that enhances one's ability to cope with stress (Maddigan et al., 2000).

Two participants who had cataract extractions felt their lives to be meaningful when the group went to visit and take care of them at the hospital. One participant said that, "I came here to have a cataract removal alone. My friends visited me here. They helped me carry stuff and drive me to my home. I feel have a meaningful life". This incidence was associated with the reports from several studies that social connections through helping neighbors and visiting peers could improve self-worth among elders (McHugh & Larson-Keagy, 2005; WHO, 1999, 2005). Participants were also satisfied with the support they got from group friends. They thought it was a

sense of companionship. They also got news and information in their day-to-day life from the group. One participant was satisfied with her transport supported by a friend. A person who had a private vehicle drove her to the community health center on the diabetic day. She said that, "...he picked up me here from my home. It was early morning...I didn't dare to wake my son up. He had worked overtime at his job last night. You know, at 5 o'clock in the morning, I can't find a motorbike taxi. Even if I can, it's so expensive--at least 50 Baht". In this situation, the self-help group was a form of mutual assistance that could resolve common problems in relation to insufficient family support and perhaps poverty among participants.

### **3. Received a sense of empowerment**

Empowerment occurs when a person becomes able to take action for him/her and on behalf of others (Kurtz, 1997). Self-care in relation to type 2 diabetes demands more than knowledge and skills. It also requires acceptance of the disease, motivation to change, instrumental and emotional support, problem-solving skills, and a sense of personal control (DeCostor & George, 2005; Grady et al., 2001). In diabetic self-help groups, sharing suggestions, experiences, and opinions, and taking leadership roles during meetings promotes a sense of empowerment (DeCostor & George, 2005; Kurtz, 1997). In this respect, a sense of empowerment received from participating in the self-help group fostered more self-control and power in participants for better changes in managing diabetes. The mechanism of how self-control and power resulted from receiving a sense of empowerment provided by the enhanced positive changes in self-care ability and quality of life among participants.

#### **3.1 Self-control**

Participants stated that groups can enhance a feeling of self-control in managing their diabetes and they felt certain about applying their knowledge toward self-care. This respect was affirmed by DeCostor and George (2005) and Wong et al. (2005) in that self-help groups provide members with an environment that encourages and supports self-control, while influencing positive health-related behavioral changes to maximize self-care potential. For this study, recommendations and information shared among peers helped participants to control their diabetes better. They were confident in their ability to manage their diabetes. They felt sure about using what they knew about diabetes for self-treatment every day. For example, if they had high blood sugar

levels, they would plan to exercise more often than usual and were able to limit their favorite foods. They made decisions about when to see the healthcare provider about problems with their feet. Some participants stated that they could control their diabetes as follows:

*... my blood sugar is up high, 214. I haven't ridden a bike for several days; there's been so much rain this month. Anyhow, I think about group reminders, and remember that exercise should be performed continuously. So I try to exercise my arms and legs at home.*

*... my friend told me I had gained weight... My children bought me so many favorite foods. I just ate a bit...the group told me to keep be strong and not eat much...*

*... someone in the group told me my foot wound was not good. ...I went to see an official at the community health center and had it dressed...*

This occurrence could be explored based upon an empirical study of DeCostor and George. The researchers stated that group members focused on educating, encouraging and supporting one another in terms of lifestyle adjustments and self-care needs. For these reasons, the members would collectively review and confirmed their own knowledge, skills and abilities in relation to diabetic self-care. This often increased their sense of confidence and control (DeCostor & George, 2005).

Having self-control to manage diabetes derived from a sense of empowerment the group provided which also affected the quality of life of participants in terms of psychological health domain. Fostering self-control to manage diabetes gave participants greater sense of control and ability to make decisions, aligns with the concept of quality of life defined by the WHO (2007b). In this respect, the group provided a situation that encouraged and supported participants to get the life they wanted. Some participants stated that the group provided opportunities for them to listen to and care for others, to understand and further make decisions to deal with their health problems related to diabetes. Some following comments supported this viewpoint that the self-help group increased self-control in these participants.

*Having a group is good... I listen and talk to others. ... I always think about what I got today. ... I can control my blood sugar. ... Even my son bought me some*

*grapes, my favorite fruit; I ate only a bit.*

*Last month I played bridge and drank cold coffee everyday, my blood sugar was more than 200. The group advised me to limit drinking coffee. So I made a decision to give up playing bridge and drinking coffee. This month I got 146.*

### **3.2 Power**

Participants stated that the group had fostered feelings of empowerment in sharing knowledge and advice with others. The group also contributed to more problem-solving skills in managing diabetes for self and others. This finding concurred with the work of DeCoster & George (2005) and Kurtz (1997) who found that self-help groups are a place where elders with type 2 diabetes can join with others to mobilize their resources to solve problems. For this study, the participants used group meetings to join with peers. They also shared knowledge and suggestions to help people who had health problems and other concerns. This successful problem-solving contributed to a powerful feeling among them. Some comments had confirmed this powerful feeling as expressed by a participant as follows:

*I felt I was a dominant person when I gave advice to someone. I was proud of myself. One of the group peers consulted me about her increased blood sugar... I told her it's because the oranges made her blood sugar increase. I recommended her to drink some bitter gourd juice... and her blood sugar was 116 this month.*

*I feel powerful to help someone in the group plan controlling her blood sugar. I advised her to control sweet foods. ...*

*I felt great to propose the idea of writing down the reminder words on the kitchen door in order to remember taking the pill after breakfast. No one forgets it anymore.*

From these statements, it has become apparent that self-help groups have the power to influence members' capacities for change, choice, and problem-solving through building morale, increasing social ties, and promoting the exchange of views among members (Lee, 2001).

Having power to manage diabetes derived from receiving a sense of empowerment the group provided also affected the quality of life of the participants in terms of environmental domain. Having power to manage diabetes and staying in the

group fostered greater ability to access for health services among participants with opportunities for leisure activities and management of home environments aligns with the concept of quality of life defined by the WHO (2007b, 2007e). Participants were satisfied with the free service of cataract removal provided by the government. They also had the opportunity to travel with the group to make merit in another province. They were able to deal with the problem of mosquitoes in their village. Some comments as follow represented this empowerment:

*... the sub-district administrator announced cataract removals at our meeting for whoever needed them... It's a free service of the government. I mean, he is concerned about us when we're a group. ...*

*... we went to make merit at nine temples in Nakhorn Prathom Province. Our group received this support for bus service from the village fund. One person alone may never get a chance like this ...*

*There are numerous mosquitoes in our village ... We can deal with these massive mosquitoes by asking our village leader for help. We convinced others to destroy enormous used tires ...*

#### **4. Perceived self-efficacy**

Since elderly patients with type 2 diabetes often have difficulty in adopting life style changes and adhering to their diabetic treatment regimens (Bijl et al., 1999; Bonds et al., 2004), social support within the context of self-help groups has the potential to increase self-efficacy among the elders toward engaging in self-care (DeCoster & George, 2005; Garrett et al., 2005; Glasgow et al., 2001). In this research study, participating in an environment of listening and sharing knowledge, experiences, suggestions and problem-solving among group peers enhanced a sense of self-efficacy to fully engage in self-care behaviors. In this way, a sense of self-efficacy was obtained from participating in the self-help group which played a role in motivation and fostered participants to have competition and conformity for better changes in diabetic management. This mechanism by which participating in the self-help group enhanced self-efficacy in terms of motivation and fostering competition and conformity for better changes in self-care ability and quality of life among participants was also explored.

#### 4.1 Motivation

Participants reported that the group motivated them to increase efforts to deal with self-care barriers and following diabetic routines such as exercising and dietary control. This occurrence associates with the reports of several studies finding that self-efficacy is derived from social support within the context of self-help groups to motivate a person to invest more effort and persistence in what they do (Conner & Norman, 1995; Garrett et al., 2005; Kear, 2000; Torres et al., 2003). One participant expressed that the group motivated her to get regular exercise. When she heard a group peer tell her that she was able to exercise with the group, she increased her effort to do so. The recommendations received from friends also increased an effort to deal with the high blood sugar levels that confronted the participants. They were sure that they would be able to follow their diabetic diet every day. The group provided an atmosphere of motivation in controlling blood sugar with the people who succeeded. The successful diabetic management of a group peer aroused feelings of ambition among the others. When participants saw a person in the group could control their blood sugar well and received words of admiration from the group, they also tried to do so. Some following comments reflected the influence of motivation from the group:

*In the past, I feared to exercise. I had a problem with my knees; they couldn't be flexed. ... Someone in the group told me to calm down and advised me to massage my knees with a kind of hot balm ... When my knees were better, she told me slowly walk around my home. This time, I had no problem with my knees, so I go to exercise with the group every time. Thanks to her for the advice and motivation.*

*I always got bored of myself when my blood sugar was increased. ... I often ate bananas and perhaps jackfruit after meals--I have so much of them at home. ... My friends told me I could eat those, but just a bit, and they will ask me about my blood sugar next month. I answer to myself and nobody at home pays attention to me about this.*

*We have motivations among group friends. The persons who have blood sugar decreased will be admired and the ones who haven't will try for the next.*

*I enjoy motivate myself to get decreased blood sugar with my friends. If someone gets increased blood sugar, we'll have a laugh and the one who has decreased blood sugar will be praised.*

These comments were based on the principle methods of enhancing self-efficacy among individuals critiqued by Bandura (1997). Enactive mastery experiences, verbal persuasion, and vicarious experiences are the principle methods which could more clarify the mechanism that self-efficacy derived from social support within the context of self-help group can motivate participants to increase effort in dealing with self-care barriers and following diabetic routines. Enactive mastery experiences serve as individual capacity i.e. the more difficult the task, the greater the effort expended (Bandura, 1997). In this sense, emotional support received from group peers may increase the amount of effort participants expended in dealing with the self-care barriers that confronted them. Verbal persuasion serves to strengthen peoples' beliefs that they possess the capability to achieve what they desire i.e. self-efficacy increases when people struggle with difficulties and are persuaded by others that they can overcome such difficulties (Bandura, 1997). In the present research study, this might occur when participants heard a group peer telling them that they were able to overcome the struggles and they could manage their diabetes. Vicarious experiences are one of the principle methods of enhancing self-efficacy, occurring when individuals compare their attainments to those of others who are of similar status (Bandura, 1997). If individuals judge the performance of others to be superior to their own, they will raise their efforts to improve their own performance (Bandura, 1997). Therefore, in this study if participants saw others who could control their blood sugar well, they would try to do so.

Being motivated to manage diabetes was derived from receiving a sense of self-efficacy the group provided and also affected the quality of life of participants in terms of the psychological health domain. Being motivated to manage diabetes had increased self-confidence and satisfaction with life among participants, aligns with the concept of quality of life defined by the WHO (2007b, 2007e). Self-confidence increased when participants struggled with the difficulties of their exercising and dietary control and was motivated by friends that they could overcome such difficulties. One participant said, "I'm satisfied with my life now as my legs are stronger than before. I feel confident to walk around and exercise with the group. I thought my legs were too weak to exercise until the group told me I could". Having motivations to manage diabetes increased a sense of control over one's life among

participants, aligns with the concept of quality of life defined by the WHO (2007b). For example, one participant said that, "I see my friend has controlled her blood sugar well. ... Our group praised her as a typical person, so I wish to be praised like her". In this respect, self-efficacy plays an important role in motivation and is defined as the confidence a person has in performing a particular behavior to attain a desired outcome (Garrett et al., 2005; Kear, 2000; Torres et al., 2003).

### 4.3 Conformity

The group promoted the extent of conformity. Participants stated they had conformed to friends in doing self-care. They affirmed they had performed regular exercise because they saw others do so. They felt confident in performing exercise with the group and reluctant to exercise alone. One participant expressed that she felt different from others when she had increased blood sugar levels while others were decreased. Some comments reflected the conformity as follows:

*I enjoy exercising with the group... I'm shy to exercise alone at my age. I'm shy of my children; they will laugh at me for acting like a teenage.*

*I feel confident to do the same things as others. ... The group exercised so did I. The group traveled and I went, too.*

*... I had increased blood sugar levels while most of the others decreased. I felt I differed from the others. ... I intended to control my blood sugar. I hope my blood sugar will decrease like the others.*

This occurrence could be illuminated based on the cultural orientation critiqued by Bandura (1997). Cultural orientation also influences self-efficacy. Thai society is a collectivistic focusing on social expectation; hence, their behaviors follow those of others. As such, collectivists are most efficacious when they manage things together (Bandura, 1997). On this point, participants in this study would do regular exercise if they saw others do so.

Conforming to group friends in performing self-care such as exercising and controlling blood sugar resulted from receiving a sense of self-efficacy the group provided, which also affected the quality of life of participants in terms of the psychological health domain. Conformity in managing diabetes had increased self-confidence among the participants, aligns with the concept of quality of life defined by

the WHO (2007b). Participants reported they had self-confidence in not doing things differently from their friends, as revealed by a statement by one participant as follows:

*This month, my blood sugar is decreased. I feel confident, because I'm similar to the others. The group motivated me to limit eating sweets and exercise everyday.*

### **Usefulness of Critical Social Theory and Participatory Action Research through a Self-help Group Process**

Critical social theory offers the idea of emancipating people from disadvantaged conditions. The theory espouses the notion of empowering people to identify their life constraints by using knowledge for desired positive changes. Participatory action research is a research method highly consistent with critical social theory in that it enhances people's recognition of social or health problems through combined knowledge and action for further positive changes. As revealed in this study, establishing a self-help group for affording mutual assistances and experience to overcoming a common problem has proved to be an alternative way of combined knowledge and action for changes. Using the critical social theory as a guiding framework and the participatory action research as a research method in this study therefore has resulted in gaining positive outcomes of the self-help group process in rural-dwelling Thai elders with type 2 diabetes.

Based on the theoretical framework of this research approach, the researcher was allowed to work collaboratively with type 2 diabetic elders to deal with the disadvantageous conditions affecting health and quality of life for a societal level, rather than on an individual level. Their inability to fully engage in self-care not only stemmed from a non-adhered behavior, but their limitations also were derived from disadvantageous conditions such as low education, poverty, limited family support, and non-coverage health services. Although it was not easy to apply the critical social theory which is a Western theory, to fully describe rural Thai elders with type 2 diabetes who tended to prefer to maintain social harmony, establishing the self-help group using the participatory action research approach could assist the elders to work collaboratively and positively with others. Through this research approach, they could use their own knowledge through the steps of planning, acting, observing,

reflecting, and revising the plan, to seek strategies to overcome barriers and further bring about sustained positive changes in their self-care ability and quality of life. The significantly increased self-efficacy and quality of life scores and the significantly decreased fasting blood sugar levels among participants also demonstrated the success of this self-help group process. Sustainability of the group in this study could remarkably reflect perceived usefulness and positive attitudes among these participants.

Given the overall findings obtained from this study, it clearly demonstrated that the self-help group interventions using critical social theory through participatory action research approach as a study framework were very useful and effective in enhancing self-care ability and quality of life among type 2 diabetic participants. The self-help group could be further proposed as an effective method of self-managing elders with type 2 diabetes and other group of patients. The Theoretical framework of this study could then be applied to further clinical practices, so as to help researchers to analyze existing problems and form partnerships with participants and communities to create positive changes in health behaviors in chronically ill patients living with disadvantaged conditions.

### **Strength of the Study**

The strength of this study is obvious in terms of the congruence of the theory, methodology and intervention used. Critical social theory helps the researcher to explore the disadvantaged conditions of the participants and empower them to emancipate themselves by utilizing their own knowledge and experiences for their betterment. Participatory action research method espouses the value of emancipation and empowerment as the researcher has helped participants to identify constraints and takes action to overcome such constraints. The self-help group is a form of mutual aid and also follows the principles of participatory action research in terms of enhancing collaborative work and sharing mutual aids and experiences. Taking all of these aspects into account, the overall study design therefore enhances the value of this research study.

Finally, this study reported participants' perspectives about why their behaviors changed after participating in the self-help group in deep exploration. Establishing the self-help group in the participants' community enhances context fit with cultural

values and beliefs among participants. Since Thai elders generally reside in a collective society, self-help group could be suitable for them to manage things together. Culturally-sensitive knowledge from sharing knowledge and experiences among participants tend to fit well with their living conditions and help them improved their self-care ability and quality of life in the long-run.

### **Limitations**

Some limitations might influence some research findings. Most specifically, perceptions of participants about their experiences of participating in the self-help group might affect their self-care ability and quality of life.

1. As most participants (85%) participating in this study were females, the perceptions about positive changes in their self-care ability and quality of life were thus likely to be derived from female viewpoints. As already known, gender differences might affect participants' beliefs and experiences, and thus the ways they think, perceive and act. As such, the research findings are to participants' perceptions about those changes may not represent well with the male population.

2. The perceptions gathered on the process of this study were accessed via focus group interviews, not individual interviews. If the contextual perspectives were particularly personal, participants may not have wanted to discuss in a group setting. As such, the perspectives presented in the group discussion might have some limitations to some extents.

3. The results of fasting blood sugar could not confirm completely whether a participant had controlled his/her diabetes well. Fasting blood sugar levels rapidly vary depending on the kinds of current food consumption of each individual. The assessment of hemoglobin A1c is in fact more accurate because it can detect blood glucose according to food consumption in the last eight weeks (Himathongcum et al., 2007). The limitation of the hemoglobin A1c laboratory test in the research setting, thus prohibited the researcher to obtain more accurate fasting blood sugar in the study.

## **CHAPTER VI**

### **CONCLUSION**

This chapter provided the summary and conclusion of the study. Implications and recommendations for nursing practice, nursing education national health policy and future research were also mentioned.

#### **Summary and Conclusion of the Study**

This study was the integration of qualitative and quantitative approaches through a participatory action research with aiming to enhance self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes through a self-help group process. The researcher and 20 participants collaboratively worked in a 5-step research process including planning, acting, observing, reflecting, and revising the plan. Critical social theory served as a prudent guiding framework for this study. Data collection was conducted at a rural village in the Bang Pa Han District of the Ayutthaya Province from July to December, 2008. Participants were recruited to participate in the study using the following inclusion criteria: males and females aged 60 and older, ability to hear and speak, and consent to participate in the self-help group meetings at least 10 out of 12 times.

The participants went to attend group meetings every two weeks for 12 times in six months. Meeting places were at the primary care unit and the sub-district office of the village. Procedures and activities in the group meetings were planned by the researcher and participants comprising sharing experiences, knowledge, information and problem solving related to diabetic management. Other activities were visiting peers at the hospital, participating in religious ceremonies, exercising and traveling in the group, and dealing with the problems of home environments.

The measured clinical outcomes were participants' self-efficacy, fasting blood sugar levels, quality of life and perceptions of participants about their experiences in participating in the self-help group affected their self-care ability and quality of life.

The participants' perceptions were evaluated at every group meeting by focused group discussion and observation. Quantitative data including self-efficacy, quality of life and fasting blood sugar levels, were collected at the initial period and after the self-help group established six months using survey questionnaires and a chart review of blood sugar detection at the diabetic clinic. The quantitative data in this study was gathered from the personal information sheet, the WHOQOL-BREF-THAI and DSES questionnaires, and the fasting blood sugar levels from a chart review.

The data gathered from interview transcripts, field notes and memos was analyzed by content analysis. Basic descriptive statistics were used to describe the participants' socio-demographic characteristics. The survey instrument scores measuring the participants' quality of life, self-care ability and fasting blood sugar levels from a chart review were analyzed by changing scores that can be derived through the paired-sample *t* tests to determine whether or not there were significant differences in clinical outcomes before and after participating in the self-help group.

The results showed improvement in self-care ability and quality of life among the participants after joining the self-help group for six months. Before participating in the self-help group, the participants had average scores of self-efficacy within a moderate level. After participating, however, they had increased average scores of self-efficacy within a high level. The diabetes self-efficacy scores significantly increased among participants after participating in the self-help group at  $p < .01$ . Before participating in the self-help group, the participants had average scores of fasting blood sugar levels that were higher than normal. After participating, however, they had decreased average scores for fasting blood sugar levels that were near to normal. This was indicated that fasting blood sugar scores significantly decreased among participants after participating in the self-help group at  $p < .01$ . Before participating in the self-help group, the participants had average quality of life scores at a moderate level. After participating, however, their average quality of life scores were either slightly increased or remained at the same level. This was indicated that quality of life scores significantly increased among participants after participating in the self-help group at  $p < .01$ .

Participant's perceptions about their experiences participating in the self-help group served as the mechanism by which better changes in their self-care barriers and

further improvement of their diabetic self-care ability and quality of life occurred among participants. In terms of positive changes in self-care ability, the culturally-sensitive knowledge gained from sharing experiences among participants was likely to fit with each participant's life condition, and enhanced understanding, belief and acceptance among the participants. Social support from the mutual assistance of group peers had fostered more self-confidence and willpower among the participants in managing diabetes in their day-to day lives. A sense of empowerment received from participating in the self-help group had fostered more self-control and power among participants to have better changes in managing their diabetes. A sense of self-efficacy received from participating in the self-help group played a role in motivation and fostered conformity among participants toward better changes in diabetic management.

Regarding positive changes in quality of life after participating in the self-help group, the participants perceived that their quality of life in terms of physical and psychological health, social relationships and environment was increased. Understanding knowledge and information received from the group enhanced with more access to knowledge and information they required in their day-to-day lives. Believing in knowledge and information helped participants have more self-satisfaction and felt life to be meaningful. Applying the knowledge gained from the group i.e. creating equipment for exercising at home made, them have more energy and better sleep, while fostering positive feelings. Having self-confidence in managing diabetes resulted from social support that led participants toward greater self-satisfaction, life enjoyment and opportunities to participate in community activities. Having willpower to manage diabetes derived from social support decreased negative feelings and brought about feelings of a meaningful life. Gaining self-control to manage diabetes derived from a sense of empowerment fostered greater ability to make decisions among the participants. Having power to manage diabetes in the group fostered greater ability to access health services, opportunities for leisure activities and management of home environment among the participants. A sense of self-efficacy received from the group increased self-confidence and satisfaction with life. Having motivation in controlling blood sugar with others increased a sense of

control. Conforming to group friends in doing self-care such as exercising and controlling blood sugar increased self-confidence to better manage their diabetes.

With regard to the findings of this study, the self-help group as a form of mutual aid falling under the auspice of the critical social theory and participatory action research offered many benefits to the elders with type 2 diabetes, including improvement of self-care ability and quality of life with greater capacity for type 2 diabetic management.

### **Implications and Recommendations**

#### **1. Nursing practice**

Enhancing self-care ability and quality of life through self-help groups could be appropriate for characteristics, community settings, cultural values and beliefs among elders with type 2 diabetes. Doing so could be due to long term effects contributing to the clinical research outcomes. Thai elders would gain culturally-sensitive knowledge through a self-help group participation that is likely to increase their self-care ability and promote their quality of life. Thus, the diabetes self-help group process could be implemented at primary care units. This self-help group could be run as part of diabetes health education in diabetic clinics of primary care units. Group meetings could be set up as patients await treatment under the responsibility of the registered nurses of primary care units. The registered nurses should be trained in running the self-help group and taking a role as a group member and consultant. This could help elders with type 2 diabetes learn to manage their diabetes effectively.

#### **2. Nursing education**

For nursing as a discipline, the findings of this study would be disseminated through scholarly publications to focus on helping elders improve their self-management of diabetes. The self-help group process could be developed for training advanced nurse practitioners. The conceptual framework in relation to the critical social theory and methodology as participatory action research which contribute positive changes in self-care ability and quality of life of rural-dwelling elders with type 2 diabetes could be contained in academic curriculum of public health nursing.

#### **3. National health policy**

The findings of this study presented the effectiveness of the self-help group process in a community care setting. Regarding the overall objectives of the 10<sup>th</sup>

National Health Development Plan focus on to strengthen individuals, families, communities and society by promoting communities to have groups of health activities. These findings might also be presented to Thai government officials in order to lobby for publicly funded self-help group activities in community care settings. This success at promoting a self-help group on aging calls for active participation and closes collaboration among governmental, non-governmental and voluntary organizations, as well as private corporations, academia and the media by broadcasting the benefit of a self-help group as a health activity in a rural community via publishes, newspapers, televisions, and local radios.

#### **4. Further research**

Recommendations for further researches are as follows:

4.1 Researchers could consider using an individual interview strategy instead of focused group discussion only to obtain more deep and personal information from individuals. In the focused group discussion, the amount of time that participants have to share their perspectives was limited due to the number of participants present. If the topics to be discussed are sensitive in some regard, or researchers wish to compare participants' experiences on a topic, then the participants should be grouped according to gender, age, social class or experience etc.

4.2 Further studies could test participants' blood sugar with the HbA1c method to get more accurate results.

4.3 Future research could study other factors that may influent the behavioral changes for achieving blood sugar control. among patients with type 2 diabetes such as cultures and beliefs.

## REFERENCES

- Adamsen, L. (2002). From victim to agent: The clinical and social significance diseases. *Scandinavian Journal of Caring Sciences*, 16(3), 224-231.
- Aekplakorn, W., Bunnag, P., Woodward, M., Sritara, P., Cheepudomwit, S., Yamwong, S., et al. (2006). A risk scores for predicting incident diabetes in the Thai population. *Diabetes Care*, 29(8), 1872-1877.
- Aekplakorn, W., Stolk, R. P., Neal, B., Suriyawongpaisal, P., Chongsuvivatwong, V., Cheepudomwit, S., et al. (2003). The prevalence and management of diabetes in Thai Adults: The international collaborative study of cardiovascular disease in Asia. *Diabetes Care*, 26(10), 2758-2763. Retrieved November 13, 2006, from <http://care.diabetesjournals.org/cgi/content/full/26/10/2758>.
- Ahmad, A., & Isvilanonda, S. (2003). *Rural poverty and agriculture diversification in Thailand*. Bangkok: Kasetsart University. Retrieved February 4, 2007, from [http://www.nek.lu.se/publications/workpap/Papers/WP03\\_19.pdf](http://www.nek.lu.se/publications/workpap/Papers/WP03_19.pdf).
- Aikins, A. D. (2003). Living with diabetes in rural and urban Ghana: A critical social psychological examination of illness action and scope for intervention. *Journal of Health Psychology*, 8(5), 557-572.
- Aikins, A. D. (2004). Strengthening quality and continuity of diabetes care in rural Ghana: A critical social psychological approach. *Journal of Health Psychology*, 9(2), 295-309.
- Aimmak, B. (1994). *A study of self-help group on the post-mastectomy patients with chemotherapy*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Aleksiuk, M. (1996). *Power therapy: Maximizing health through self-efficacy*. Seattle, CA: H & H.
- Aljaseem, L. I., Peyrot, M., Wissow, L., & Rubin, R. R. (2001). The impact of barriers and self-efficacy on self-care behaviors in type 2 diabetes. *The Diabetes Educator*, 27(3), 393-404.

- American Diabetes Association. (2004). Diagnosis and classification of diabetes mellitus. *Diabetes Care*, 27(Suppl. 1), S5-S10.
- Andrews, G. R., & Sidorenko, A. (2000). *Research agenda on ageing for the 21<sup>st</sup> century: A joint project of the United Nations Programme on Ageing and the International Association of Gerontology*. The United Nations Programme on Ageing and the International Association of Gerontology.
- Angus, J., Kontos, P., Dyck, I., McKeever, P., & Poland, B. (2005). The personal significance of home: Habitus and the experience of receiving long-term home care. *Sociology of Health & Illness*, 27(2), 161-187.
- Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco, CA: Jossey-Bass.
- Applegate, W. B., & Curb, J. D. (1990). Designing and executing randomized clinical trials involving elderly persons. *Journal of the American Geriatrics Society*, 38(8), 943-950.
- Assuk, T. (2001). *The effectiveness of community self-help group on the development of health behavior among type 2 diabetic patients*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Bailie, R. S., Si, D., Robinson, G. W., Togni, S. J., & d'Abbs, P. H. N. (2004). A multifaceted health-service intervention in remote aboriginal communities: 3-year follow-up of the impact on diabetes care. *The Medical Journal of Australia*, 181(4), 195-200.
- Baltes, P. B., & Smith, J. (2003). New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age. *Gerontology*, 49, 123-135.
- Baltes, P. B., & Baltes, M. M. (1990). *Successful aging: Perspectives from the behavioral sciences*. New York: The Press Syndicate of the University of Cambridge.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Bandura, A. (1994). Self-efficacy. *Encyclopedia of Human Behavior*, 4, 71-81. Retrieved February 1, 2007, from <http://www.des.emory.edu/mfp/BanEncy.html>.

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman and Company.
- Barron, J. (1999). Monthly diabetes self-help group. *DiabeteSource*, 2(3). Retrieved February 4, 2007, from [http://www.paddocklabs.com/forms/diabete/volume\\_2\\_3.pdf](http://www.paddocklabs.com/forms/diabete/volume_2_3.pdf).
- Barton, S. S., Anderson, N., & Thommasen, H. V. (2005). The diabetes experiences of aboriginal people living in a rural Canadian community. *The Australian Journal of Rural Health*, 13(4), 242-246.
- Becker, G. (2003). Meanings of place and displacement in three groups of older immigrants. *Journal of Aging Studies*, 17, 129-149.
- Ben-Ari, A. T. (2002). Dimensions and predictions of professional involvement in self-help groups: A view from within. *Health & Social Work*, 27(2), 95-103.
- Benton, J. (2005). *Using action research to foster positive social values*. Lanham, MD: Scarecrow Education.
- Benzel-Lindley, J. A. (2005). *Exploration of factors impacting the self-care of elder with diabetes*. Doctoral dissertation, The University of Arizona, USA.
- Bernal, H., Woolley, S., Schensul, J. J., & Dickinson, J. K. (2000). Correlates of self-efficacy in diabetes self-care among Hispanic adults with diabetes. *The Diabetes Educator*, 26, 673-680.
- Biggs, S., Lowenstein, A., & Hendricks, J. (2003). *The need for theory: Critical approaches to social gerontology*. New York: Baywood Publishing Company.
- Bijl, J., Poelgeest-Eeltink, A., & Shortridge-Baggett, L. (1999). The psychometric properties of the diabetes management self-efficacy scale for patients with type 2 diabetes mellitus. *Journal of Advanced Nursing*, 30(2), 352-359.
- Blood Glucose Level. (2007). *Type 2 diabetes*. Retrieved February 3, 2007, from <http://www.femail.com.au/type2diabetes.htm>.
- Bond, J., & Corner, L. (2004). *Quality of life and older people*. Maidenhead: Open University Press.

- Bonds, D. E., Camacho, F., Bell, R. A., Duren-Winfield, V. T., Anderson, R. T., & Goff, D. C. (2004). The association of patient trust and self-care among patients with diabetes mellitus. *BMC Family Practice*, 5(26). Retrieved February 5, 2007, from <http://www.biomedcentral.com/1471-2296/5/26>.
- Borda, O. F. (1988). *Knowledge and people's power: Lessons with peasants in Nicaragua, Mexico and Colombia*. New Delhi, India: Indian Social Institute.
- Bott, U., Muhlhauser, I., Overmann, H., & Berger, M. (1998). Validation of a diabetes-specific quality-of-life scale for patients with type 1 diabetes. *Diabetes Care*, 21(5), 757-769.
- Bowling, A. (1997). *Measuring health: A review of quality of life measurement scales* (2<sup>nd</sup> ed.). Buckingham, England: Open University Press.
- Boyer, J. G., & Earp, J. A. L. (1997). *RCMAR measurement tools: Diabetes-39 (D-39)*. Retrieved December 19, 2006, from <http://www.musc.edu/dfm/RCMAR/D39.html>.
- Burroughs, T. E., Desikan, R., Waterman, B. M., Gilin, D., & McGill, J. (2004). Development and validation of the diabetes quality of life brief clinical inventory. *Diabetes Spectrum*, 17(1), 41-49.
- Burzynski, S. R. (2003). Gene silencing – a new theory. *Medical Hypotheses*, 60(4), 578-583.
- Butcher, A., & Dodson, P. (2002). *Visual loss*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515922/ABSTRACT>.
- Cancela, V. D. L., Chin, J. L., & Jenkins, Y. M. (1998). *Community health psychology: Empowerment for diverse communities*. New York: Routledge.
- Carpinello, S. E. (1995). A focused interview with members of a Latino self-help group. *Psychiatric Rehabilitation Journal*, 19(2), 65-67.
- Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research*. Philadelphia: The Falmer Press.
- Carson, T., Connors, B., Ripley, D., & Smits, H. (1989). *Creating possibilities: An action research handbook*. Alberta, Canada: University of Alberta.

- Carson, T. R. & Sumara, D. J. (1997). *Action research as a living practice*. New York: Peter Lang.
- Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion*, 27(2), 103-123.
- Cassidy, T. (1996). Cognitive appraisal, vulnerability and coping: An integrative analysis of appraisal and coping mechanisms. *Counseling Psychology Quarterly*, 9(3), 261-279.
- Chappell, N. L. (2005). Perceived change in quality of life among Chinese Canadian seniors: The role of involvement in Chinese culture. *Journal of Happiness Studies*, 6, 69-91.
- Chappell, N. L., Gee, E., McDonold, L., & Stones, M. (2003). *Aging in contemporary Canada*. Toronto, Canada: Prentice Hall.
- Charlton, G. S. (2002). Coping and self-help group membership in Parkinson's disease. *Health & Social Care in the Community*, 10(6), 472-478.
- Charoenyooth, C., Youngpradith, A., Jewpattanakul, Y., Tawsakulkaew, T., Utharattana, P., Choosang, S., et al. (2006, January). *Health problems of the chronically ill elderly in the rural community*. Poster session presented at Miracle Grand Hotel, Bangkok, Thailand.
- Cheal, D. (2000). Aging and demographic change. *Canadian Public Policy*, 26(Suppl. 2), S109-S122.
- Chegade, J. M., & Mooradian, A. D. (2006). *Drug therapy: Current and emerging agents*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515928/ABSTRACT>.
- Chen, K. (1998). *Psychosocial determinants of compliance behavior and its impact on the management of diabetes among elderly diabetes patients in Taiwan*. Doctoral dissertation, University of California, USA.
- Chesler, M. A. (1991). Participatory action research with self-help groups: An alternative paradigm or inquiry and action. *American Journal of Community Psychology*, 19(5), 757-768.

- Christel, H. (2003). *Quality of life and application of the transtheoretical model to diabetes self-management behaviors in order adults with type 2 diabetes*. Doctoral dissertation, Florida International University, USA.
- Chyun, D. (2006, January). *Risk factors for declining quality of life in older adults with type 2 diabetes*. Paper presented at Miracle Grand Hotel, Bangkok, Thailand.
- Clarke, P. J., Marshall, V. W., Ryff, C. D., & Rosenthal, C. J. (2000). Well-being in Canadian seniors: Findings from the Canadian study of health and aging. *Canadian Journal on Aging, 19*(2), 139-159.
- Coe, M., & Neufeld, A. (1999). Male caregivers' use of formal support. *Western Journal of Nursing Research, 21*(4), 568-588.
- Colagiuri, S., Conway, B., Grainger, D., Davey, P., Colagiuri, R., Graham-Clarke, P., et al. (2003). *Cost of type 2 diabetes care in Australia – the diabcost study*. Retrieved February 3, 2007, from [http://www.m-tag.net/ISPORUSA2003\\_PDB16.pdf](http://www.m-tag.net/ISPORUSA2003_PDB16.pdf).
- Conner, M., & Norman, P. (1995). *Predicting health behavior: Research and practice with social cognition models*. Buckingham, England: Open University Press.
- Cornwall, A., & Jewkes, R. (1995). What is participatory research? *Social Sciences and Medicine, 41*(12), 1667-1676.
- Cousins, J. B., & Earl, L. M. (1995). *Participatory evaluation in education: Studies in evaluation use and organizational learning*. London: Falmer Press.
- Cousins, S. O., & Gillis, M. M. (2005). "Just do it... before you talk yourself out of it": The self-talk of adults thinking about physical activity. *Psychology of Sport and Exercise, 6*, 313-334.
- Crossley, N. (2005). *Key concepts in critical social theory*. London: Sage.
- Croxson, S. C. M. (2002). *Metabolic Decompensation*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515918/ABSTRACT>.
- Daniulaityte, R. (2004). Making sense of diabetes: Cultural models, gender and individual adjustment to type 2 diabetes in a Mexican community. *Social Science & Medicine, 59*(9), 1899-1912.

- Dant, T. (2003). *Critical social theory: Culture, society and critique*. London: Sage.
- Davies, B., & Logan, J. (2007). *Reading research: A user-friendly guide for nurses and other health professionals* (4<sup>th</sup> ed.). Toronto, Canada: Mosby.
- DeCoster, V. A., & George, L. (2005). An empowerment approach for elders living with diabetes: A pilot study of a community-based self-help group-the diabetes club. *Educational Gerontology, 31*, 699-713.
- Deeprawat, P. (1996). *The effectiveness of self-help group program on the prevention of sexually transmitted disease among primigravidarum attending Bhumipoladulayadej Hospital*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Denton, M. A., Kemp, C. L., French, S., Gafni, A., Joshi, A., & Rosenthal, C. J. (2004). Reflexive planning for later life. *Canadian Journal on Aging, Suppl.*, S71-S82.
- Denzin, N. K., & Lincoln, Y. S. (2000). *Handbook of qualitative research* (2<sup>nd</sup> ed.), Thousand Oaks, CA: Sage.
- Diabetes Monitor. (2006). *Starting a diabetes support group*. Retrieved October 19, 2006, from <http://www.diabetesmonitor.com/b153.htm>.
- Diabetes UK. (2006a). *Local support group: Diabetes UK voluntary groups*. Retrieved December 19, 2006, from [http://www.diabetes.org.uk/How\\_we\\_help/Local\\_support\\_groups/](http://www.diabetes.org.uk/How_we_help/Local_support_groups/).
- Diabetes UK. (2006b). *Type 2 diabetes*. Retrieved December 19, 2006, from <http://www.patient.co.uk/showdoc/23068721/>.
- Diabetes UK. (2007). *Charter for diabetes UK voluntary groups*. London: UK.
- Dickinson, J. K. (1999). A critical social theory approach to nursing care of adolescents with diabetes. *Issues in Comprehensive Pediatric Nursing, 22*, 143-152.
- Dooher, J., & Byrt, R. (2003). *Empowerment and the health service user*. Dinton, England : Quay Books.
- Dungan, J. M., Brown, A. V., & Ramsey, M. A. (1996). Health maintenance for the independent frail older adult: Can it improve physical and mental well-being? *Journal of Advanced Nursing, 23*, 1185-1193.

- Eljedi, A., Mikolajczyk, R. T., Kraemer, A., & Laaser, U. (2006). Health-related quality of life in diabetic patients and controls without diabetes in refugee camps in the Gaza strip: A cross-sectional study. *BMC Public Health*, *6*, 268-274.
- Elliott, J. (1991). *Action research for educational change*. Philadelphia: Open University Press.
- Emerick, R. E. (1995). Clients as claims makers in the self-help movement: Individual and social change ideologies in former mental patient self-help newsletters. *Psychosocial Rehabilitation Journal*, *18*(3), 17-35.
- Ewald, D., Patel, M., & Hall, G. (2001). Hospital separations indicate increasing need for prevention of diabetic foot complications in central Australia. *The Australian Journal of Rural Health*, *9*, 275-279.
- Fals-Borda, O., & Rahman, M. A. (1991). *Action and knowledge: Breaking the monopoly with participatory action-research*. New York: The Apex Press.
- Fast, J. E., Keating, N. C., Otfinowski, P., & Derksen, L. (2003). Characteristics of family/friend care networks of frail seniors. *Canadian Journal of Aging*, *23*(1), 5-19.
- Finn, J. (1999). An exploration of helping process in an online self-help group focusing on issues of disability. *Health & Social Work*, *24*(3), 220-231.
- Finucane, P., & Crotty, M. (2002). *Rehabilitation*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515929/>  
ABSTRACT.
- Finucane, P., & Popplewell, P. (2002). *Diabetes mellitus and impaired glucose regulation in old age: The scale of the problem*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515914/>  
ABSTRACT.
- Fisher, B. J., & Specht, D. K. (1999). Successful aging and creativity in later life. *Journal of Aging Studies*, *13*(4), 457-472.
- Fitch, M. I. (2000). Men's perspectives on the impact of prostate cancer: Implications for oncology nurses. *Oncology Nursing Forum*, *27*(8), 1255-1263.

- Flynn, A. C., Jelinek, H. F., & Smith, M. (2005). Heart rate variability analysis: A useful assessment tool for diabetes associated cardiac dysfunction in rural and remote areas. *The Australian Journal of Rural Health, 13*, 77-82.
- Fontana, J. S. (2004). A methodology for critical science in nursing. *Advances in Nursing Science, 27*(2), 93-101.
- Gambert, S. R. (1990). *Diabetes mellitus in the elderly: A practical guide*. New York: Raven Press.
- Gamsu, D. S., Sutton, M. S., Bennett, L., & Ward, J. D. (2002). The development of a psychoeducational group intervention for overweight women with type 2 diabetes mellitus: a service evaluation. *Practical Diabetes International, 19*(2), 43-50.
- Garrett, N., Hageman, C. M., Sibley, S. D., Davern, M., Berger, M., Brunzell, C., et al. (2005). The effectiveness of an interactive small group diabetes intervention in improving knowledge, feeling of control, and behavior. *Health Promotion Practice, 6*(3), 320-328.
- Garwick, A. W., & Auger, S. (2003). Participatory action research: The Indian family stories project. *Nursing Outlook, 51*(6), 261-266.
- Gayle, G. (2003). *The relationship between self blood glucose monitoring and quality of life impact on Alaskan adults with diabetes*. Master's thesis, University of Alaska Anchorage, USA.
- Gayle, J. (2005). *The development, implementation and results of the reach Detroit diabetes lifestyle intervention for Africans and Latinos*. Doctoral dissertation, The University of Michigan, USA.
- Gelding, S. V., Vijayaraghavan, S., Davison, C., & Chowdhury, T. A. (2005). Community Diabetes: An East London perspective. *Journal of the Royal Society of Medicine, 98*, 96-100.
- Gilden, J. L., Hendryx, M. S., Clar, S., Casia, C., & Singh, S. P. (1992). Diabetes support groups improve health care of older diabetes patients. *Journal of the American Geriatrics Society, 40*(2), 147-150.
- Gill, J. M., Mainous, A. G., Diamond, J. J., & Lenbard, J. M. (2003). Impact of provider continuity on quality of care for persons with diabetes mellitus. *Annals of Family Medicine, 1*(3), 162-170.

- Ginzberg, R. (1995). Feminine, science, and nursing. In A. Omery, E. C. Kasper, & G. G. Page (Eds.), *In search of nursing science* (pp. 93-105). Thousand Oaks, CA: Sage.
- Glasgow, R. E., Toobert, D. J., & Gillette, C. D. (2001). Psychosocial barriers to diabetes self-management and quality of life. *Diabetes Spectrum, 14*(1), 33-41.
- Gleeson-Kreig, J., Bernal, H., & Woolley, S. (2002). The role of social support in the self-management of diabetes mellitus among a Hispanic population. *Public Health Nursing, 19*(3), 215-222.
- Goff, L. M. (1999). An assessment of the diets of people with rheumatoid arthritis. *Journal of Human Nutrition & Diabetics, 12*(2), 93-101.
- Grady, A. O., Simmons, D., Tupe, S., & Hewlett, G. (2001). Effectiveness of changes in the delivery of diabetes care in a rural community. *The Australian Journal of Rural Health, 9*, 75-79.
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today, 24*, 105-112.
- Grant, J. S., & Davis, L. L. (1997). Focus on quantitative methods: Selection and use of Content experts for instrument development. *Research in Nursing & Health, 20*, 269-274.
- Gray, R. E. (1999). Cancer self-help groups and family physician. *Cancer Practice, 7*(1), 10-15.
- Greenfield, E. A., & Marks, N. F. (2004). Formal volunteering as a protective factor for older adults' psychological well-being. *Journal of Gerontology, 59B*(5), S258-S264.
- Greenwood, D. J. (1999). *Action research: From practice to writing in an international action research development program*. Philadelphia: John Benjamins Publishing Company.
- Greenwood, D. J., & Levin, M. (1998). *Introduction to action research: Social research for social change*. Thousand Oaks, CA: Sage.

- Grembowski, D., Patrick, D., Diehr, P., Durham, M., Beresford, S., Kay, E., et al. (1993). Self-efficacy and health behavior among older adults. *Journal of Health and Social Behavior, 34*(2), 89-104.
- Griffiths, J. (2003). These rape survivors have started an anonymous self-help group for other victims. *Health, 17*(4), 74.
- Gunderson, M. (2003). Age discrimination in employment in Canada. *Contemporary Economic Policy, 21*(3), 318-328.
- Hart, E., & Bond, M. (1995). *Action research for health and social care: A guide to practice*. Philadelphia: Open University Press.
- Health Canada. (2001). *Dare to age well: Workshop on healthy aging, part II diabetes and seniors*. Ottawa, Canada: Division of Aging and Seniors.
- Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Thousand Oaks, CA: Sage.
- Hellerich, G. (2001). Self-help visions and practices in Germany. *Psychiatric Rehabilitation Journal, 25*(1), 81-85.
- Herr, K., & Anderson, G. L. (2005). *The action research dissertation: A guide for students and faculty*. Thousand Oaks, CA: Sage.
- High, D. M., & Doole, M. M. (1995). Ethical and legal issues in conducting research involving elderly subjects. *Behavioral Sciences and the Law, 13*, 319-335.
- Hilderley, L. (2001). *Quality of life*. Retrieved January 12, 2007, from <http://www.ricancercouncil.org/editorials/general-quality-of-life.php>.
- Hill, R. G. (1998). In sickness and in health: The experiences of friends and relatives caring for people with manic depression. *Journal of Mental Health, 7*(6), 611-620.
- Ho, P. J., & Turtle, J. R. (2002). *Establishing the diagnosis*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515916/ABSTRACT>.
- Horiuchi, S., & Ota, N. (2006, January). *Care for mothers of stillborn babies: Self-help meeting to encourage their psychological growth*. Poster session presented at Miracle Grand Hotel, Bangkok, Thailand.

- Hornsten, A., Sandstrom, H., & Lundman, B. (2004). Issues and innovations in nursing practice: Personal understandings of illness among people with type 2 diabetes. *Journal of Advanced Nursing*, 47(2), 174-182.
- Huang, E. S., Gorawara-Bhat, R., & Chin, M. H. (2005). Self-reported goals of older patients with type 2 diabetes mellitus. *Journal of the American Geriatrics Society*, 53(2), 306-311.
- Hunsley, T. (2005). *Encouraging choice in work and retirement: Project report*. Policy Research Initiative, Canada.
- Hurley, A. C., & Shea, C. A. (1992). Self-efficacy: Strategy for enhancing diabetes self-care. *The Diabetes Educator*, 18(2), 146-150.
- Hwang, H. F., Liang, W. M., Chiu, Y. N., & Lin, M. R. (2003). Suitability of the WHOQOL-BREF for community-dwelling older people in Taiwan. *Age and Ageing*, 32, 593-600.
- International Diabetes Federation. (1999). *Diabetes guidelines self-care Europe type 2 sections 6-7*. Retrieved November 20, 2006, from <http://www.staff.newcastle.ac.uk/philip.home/t2dgch3a.htm>.
- International Diabetes Federation. (2005). *Experts stress that investing in prevention and better treat of diabetes reduces threats to healthcare resources*. Retrieved January 19, 2007, from <http://www.idf.org/home/index.cfm?unode=294B3DAF-F688-408C-A9D3-6F8FFA56F124>.
- Israel, B. A., Schurman, S. J., & Hugentobler, M. K. (1992). Conducting action research: Relationships between organization members and researchers. *Journal of Applied Behavioral Science*, 28(1), 74-101.
- Jacobson, A., Barofsky, I., Cleary, P., & Rand, L. (1988). *RCMAR measurement tools: Diabetes-Quality-of-Life Measure (DQOL)*. Retrieved December 19, 2006, from <http://www.musc.edu/dfm/RCMAR/DQOL.html>.
- Jirapaet, V. (2000). Effects of an empowerment program on coping, quality of life, and the maternal role adaptation of Thai HIV-infected mothers. *Journal of the Association of Nurse in AIDS Care*, 11(4), 34-45.
- Jitapunkul, S., & Chayovan, N. (2001). *National policies on ageing in Thailand*. Retrieved February 4, 2007, from [http://adrf.trf.or.th/Archive\\_data/LTCTHAILAND.doc](http://adrf.trf.or.th/Archive_data/LTCTHAILAND.doc).

- Jitapunkul, S., Chayovan, N., & Kespichayawattana, J. (2006). *National policies on ageing and long-term care provision for older persons in Thailand*. Retrieved October 26, 2006, from [http://www.idrc.ca/reports/ev-28478-201-1-DO\\_TOPIC.html](http://www.idrc.ca/reports/ev-28478-201-1-DO_TOPIC.html).
- Johnson, M. L. (2005). *The Cambridge handbook of age and aging*. New York: Cambridge University Press.
- Joining People with Diabetes. (2006). *Diabetes support group leader training*. Retrieved October 25, 2006, from <http://www.mphi.org>.
- Jongudomsuk, P. (2005). *Health care system in Thailand: Reforms towards health promotion*. Bangkok: Bureau of Policy and Planning National Health Security Office Thailand. Retrieved February 4, 2007, from [http://www.anamai.moph.go.th/6thGlobal/09\\_HCSsystem.pdf](http://www.anamai.moph.go.th/6thGlobal/09_HCSsystem.pdf).
- Kaufmann, C. L. (1995). The self-help employment center: Some outcomes from the first year. *Psychosocial Rehabilitation Journal*, 18(4), 145-162.
- Kawakami, A., Nagasaka, S., Rokkaku, K., Nakamura, T., Kusaka, I., Yajima, Y., et al. (1999). Pseudohypoparathyroidism, obesity, and type 2 diabetes. *Diabetes Care*, 22(3), 523-536.
- Kear, M. (2000). *Concept analysis of self-efficacy*. Retrieved February 21, 2007, from <http://graduateresearch.com/Kear.htm>.
- Keawe'aimoku, K. J. (2003). *Ethnic differences in the relationship between depression and health-related quality of life in persons with type 2 diabetes*. Doctoral dissertation, University of Hawaii, USA.
- Keeratiyutawong, P. (2005). *A self-management program for improving knowledge, self-care activities, quality of life, and glycosylated HbA1C in Thais with type 2 diabetes mellitus*. Unpublished doctoral dissertation, Mahidol University, Bangkok, Thailand.
- Keller, I., Makipaa, A., Kalenscher, T., & Kalache, A. (2002). *Global survey on geriatrics in the medical curriculum: A collaborative study of WHO and the International Federation of Medical Students' Associations*. Retrieved February 6, 2007, from [http://www.who.int/ageing/projects/en/alc\\_global\\_survey\\_legeme.pdf](http://www.who.int/ageing/projects/en/alc_global_survey_legeme.pdf).

- Kemmis, S. & McTaggart, R. (1990). *The action research planner*. Victoria, Australia: Deakin University.
- Khon Kaen University. (2003). *Studying and strengthening on potential of care for diabetic patients under the socio-cultural context of E-Saan*. Khon Kaen University, Thailand.
- Kim, J. E., & Moen, P. (2002). Retirement transitions, gender, and psychological well-being: A life-course, ecological model. *Journal of Gerontology*, 57B(3), P212-P222.
- Kingree, J. B. & Ruback, R. B. (1994). Understanding self-help groups. In T. J. Powell (Ed.), *Understanding the self-help organization: Frameworks and findings* (pp. 272-292). Thousand Oaks, CA: Sage.
- Kirkham, S. R. (2003). The politics of belonging and intercultural health care. *Western Journal of Nursing Research*, 25(7), 762-780.
- Kirkpatrick, S. M. (1990). Participatory nursing research: A promising methodology in third world countries. *Western Journal of Nursing Research*, 12(3), 282-292.
- Knodel, J., Chayovan, N., Mithranon, P., Amornsirisomboon, P., & Arunraksombat, S. (2005). *Thailand's older population: Social and economic support as assessed in 2002*. Retrieved February 4, 2007, from <http://www.psc.isr.umich.edu/pubs/pdf/rr05-471.pdf>.
- Koch, T., & Kralik, D. (2006). *Participatory action research in health care*. Malden, MA: Blackwell.
- Kongin, W. (1998). *Self-care of the rural Thai elderly*. Doctoral dissertation, The Catholic University of America, USA.
- Kongphantu, S. (1992). *The effectiveness of the group process applied the self-help Group towards the anxiety level of the CA-Cervix radiation therapy patients*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Kosulwat, V. (2002). The nutrition and health transition in Thailand. *Public Health Nutrition*, 5(1A), 183-189.

- Kotani, K., & Sakane, N. (2004). Effects of a self-help group for diabetes care in long-term patients with type 2 diabetes mellitus: An experience in a Japanese rural community. *The Australian Journal of Rural Health, 12*, 251-252.
- Kurtz, L. F. (1997). *Self-help and support groups: A handbook for practitioners*. Thousand Oaks, CA: Sage.
- Kuwabara, Y. (2003). The relationship between participation in a self-help group for diabetes and self-care agency and management of diabetes. *Journal of Japan Academy of Nursing Science, 23*(2), 12-21. Retrieved November 14, 2006, from <http://web.ebscohost.com/ehost/delivery?vid=9&hid=119&sid=adafb787-64b8-49c1-9cc>.
- Kwok, I. C. L. (1998). Investigation of health services and social needs of persons with laryngectomies in Hong Kong: A study of self-help involvement. *Journal of Rehabilitation, 64*(3), 21-29.
- LaRose, L. M. (2001). *A study of quality of life: Native Americans living with type 2 diabetes mellitus*. Master's thesis, University of Nevada, Reno, USA.
- Lassey, W. R., & Lassey, M. L. (2001). *Quality of life for older people: An international perspective*. Upper Saddle River, NJ: Prentice Hall.
- Lawton, M. P., Windley, P. G., & Byert, T. O. (1982). *Aging and the environment: Theoretical approaches*. New York: Springer Publishing Company.
- Lee, J. A. B. (2001). *The empowerment approach to social work practice: Building the beloved community* (2<sup>nd</sup> ed.). New York: Columbia University Press.
- Lee, S. J., McCarty, C. A., Taylor, H. R., & Keeffe, J. E. (2001). Costs of mobile screening for diabetic retinopathy: A practical framework for rural populations. *The Australian Journal of Rural Health, 9*, 186-192.
- Lertprapai, K. (1996). *The effectiveness of participation in self-help group on self-care deficit in patients with non-insulin dependent diabetes mellitus at Samutprakan Hospital, Samutprakan Province*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Leung, J. (2004). Clients and facilitators' experience of participating in a Hong Kong self-help group for people receiving from mental illness. *International Journal of Mental Health Nursing, 13*(4), 232-241.

- Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues*, 2(4), 34-46.
- Lieberman, M. A., & Bliwise, N. G. (1985). Comparison among peer and professionally directed groups for the elderly: Implications for the development of self-help groups. *International Journal of Group Psychotherapy*, 35(2), 155-175.
- Lieberman, M. A., & Snowden, L. R. (1994). Problems in assessing prevalence and membership characteristics of self-help group participation. In T. J. Powell (Ed.), *Understanding the self-help organization: Frameworks and findings* (pp. 32-49). Thousand Oaks, CA: Sage.
- Lin, M., Gao, R., & Pusari, N. (2006). Using participatory action research to provide health promotion for disadvantaged elders in Shaanxi Province, China. *Public Health Nursing*, 23(4), 332-338.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Lindsey, E., & McGuinness, L. (1998). Significant elements of community involvement in participatory action research: Evidence from a community project. *Journal of Advanced Nursing*, 28(5), 1106-1114.
- Love, J. (2003). *(Ip-health) Prevalence of diabetes, by country*. Retrieved November 13, 2006, from <http://lists.essential.org/pipermail/ip-health/2003-February/004247.html>.
- Low, G. (2000). *Quality of life perceptions among older-adult couples living with COPD*. Master's thesis, Simon Fraser University, Canada.
- Low, G. (2006). *Quality of life among community-dwelling older adult: A proposed conceptual model*. Doctoral dissertation, University of Victoria, Canada.
- Luke, D. A., Roberts, L., & Rappaport, J. (1994). In T. J. Powell (Ed.), *Understanding the self-help organization: Frameworks and findings* (pp. 88-114). Thousand Oaks, CA: Sage.
- MacDonald, P. (2006). Small steps make a big difference. *Practice Nurse*, 31(1), 26-27. Retrieved February 5, 2007, from <http://web.ebscohost.com/ehost/detail?vid=48hid=48sid=7e433b6g-dc58-4897-9caa-1f961d4bf6f1%40scsessionmgr8>.

- Maddigan, S. L., Feeny, D. H., & Johnson, J. A. (2000). *The impact of diabetes and co-morbidity on health-related quality of life: Findings from the 1996-97 national population health survey*. Institute of Health Economics.
- Maddigan, S. L., Majumdar, S., Guirguis, L. M., Lewanczuk, R. Z., Lee, T. K., Toth, E. L., et al. (2004). Improvements in patient-reported outcomes associated with an Intervention to enhance quality of care for rural patients with type 2 diabetes. *Diabetes Care*, 27(6), 1306-1312.
- Maddux, J. E. (1995). *Self-efficacy, adaptation, and adjustment: Theory, research, and application*. New York: Plenum Press.
- Mak, D. B., Whitehead, S., & Plant, A. J. (2004). So far and yet so close: Quality of management of diabetes in Australian and Canadian indigenous communities. *The Australia Journal of Rural Health*, 12, 206-209.
- Man, D. W. K. (2004). Health services needs and quality of life assessment of individuals with brain injuries: A pilot cross-sectional study. *Brain Injury*, 18(6), 577-591.
- Marram, D. (1987). *The group in approach in nursing practice*. St. Louis: Mosby.
- Maxwell, A. E., Hunt, I. F., & Bush, M. A. (1992). Effect of a social support group, as an adjunct to diabetes training, on metabolic control and psychosocial outcomes. *The Diabetes Educator*, 18(4), 303-309.
- McAllister, C. L., Green, B. L., Terry, M. A., Herman, V., & Mulvey, L. (2003). Parents, practitioners, and researchers: Community-based participatory research with early head start. *American Journal of Public Health*, 93(10), 1672-1679.
- McAulay, V., & Frier, B. M. (2002). *Hypoglycemia*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/9351592r3/ABSTRACT>.
- McDermott, R., Tulip, F., & Sinha, A. (2004). Sustaining better diabetes care in remote indigenous Australian communities. *Quality and Safety in Health Care*, 13, 295-298.
- McDowell, I., Hill, G., & Lindsay, J. (2001). An overview of the Canadian study of health and aging. *International Psychogeriatrics*, 13(Suppl. 1), 7-18.

- McHugh, K. E., & Larson-Keagy, E. M. (2005). These white walls: The dialectic of retirement communities. *Journal of Aging Studies, 19*, 241-256.
- McKenzie, A., & Grylls, J. (1999). Diabetic retinal photographic screening: A model for introducing audit and improving general practitioner care of diabetic patients in a rural setting. *The Australian Journal of Rural Health, 7*, 237-239.
- McKernan, J. (1996). *Curriculum action research: A handbook of methods and resources for the reflective practitioner* (2<sup>nd</sup> ed.). London: Kogan Page.
- McLaren, P. L., & Giarelli, J. M. (1995). *Critical theory and educational research*. New York: State University of New York Press.
- McMullin, J. A., & Marshall, V. W. (2001). Ageism, age relations, and garment industry work in Montreal. *The Gerontologist, 41*(1), 111-122.
- McShane, S. L. (2007). *Self-assessment*. Retrieved February 21, 2007, from [http://www.mcgrawhill.ca/college/mcshane4/student/olc/4obm\\_sa\\_02.html](http://www.mcgrawhill.ca/college/mcshane4/student/olc/4obm_sa_02.html).
- McTaggart, R. (1997). *Participatory action research: International contexts and consequences*. New York: State University of New York.
- McTaggart, R. (1998). Is validity really an issue for participatory action research? *Studies in Cultures, Organizations and Societies, 4*, 211-236.
- Menec, V. H. (2003). The relation between everyday activities and successful aging: A 6-year longitudinal study. *Journal of Gerontology, 58B*(2), S74-S82.
- Mesbah, M., Cole, B. F., & Lee, M. T. (2002). *Statistical methods for quality of life studies: Design, measurements and analysis*. Boston: Kluwer Academic.
- Meyer, J. (2000). Qualitative research in healthcare: Using qualitative methods in health related action research. *British Medical Journal, 320*, 178-181.
- Michele, P. (2001). *Variables affecting quality of life and adherence in adults with type 2 diabetes*. Doctoral dissertation, University of Illinois at Chicago, Health Sciences Center, USA.
- Mills, P. D., & Harvey, P. W. (2003). Beyond community-based diabetes management and the coag coordinated care trial. *The Australian Journal of Rural Health, 11*, 131-137.
- Minkler, M. (1997). *Community organizing and community building for health*. London: Rutgers University Press.

- Mongkhonsi, N. (2002). *Food consumption behavior of diabetes patients in the family context*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Moore, T. F., & Hollett, J. (2003). Giving voice to persons living with dementia; The researcher's opportunities and challenges. *Nursing Science Quarterly*, 16(2), 163-167.
- Morse, J. M. (1997). *Completing qualitative project: Details and dialogue*. Thousand Oaks, CA: Sage.
- Morse, J. M., & Richards, L. (2002). *Read me first for a user's guide to qualitative methods*. Thousand Oaks, CA: Sage.
- Muggeo, M., Zoppini, G., Brun, E., Bonora, E., & Verlato, G. (2002). *Mortality and its predictors in type 2 diabetes*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515921/ABSTRACT>.
- Mukesh, S. B. (2006). *A psychosocial investigation of depression and health-related Quality of life in patients with type 2 diabetes mellitus*. Doctoral dissertation, the University of New Mexico, USA.
- Murali, S. (2005). *Quality of life and clinical outcomes in type 2 diabetes patients at the primary care clinics of the West Virginia University Hospital*. Master's thesis, The West Virginia University Hospital, USA.
- Naemiratch, B., & Manderson, L. (2006). Control and adherence: Living with diabetes in Bangkok, Thailand. *Social Science & Medicine*, 63, 1147-1157.
- National Health Development Plan. (2009). *The Tenth National Health Development Plan 2007-2011*. Retrieved May 26, 2009, from <http://www.whothailand.org/EN/Section7.htm>.
- National Statistical Office. (2001). *Thai elderly*. Bangkok: Statistical Data Bank and Information Dissemination Division, National Statistical Office, Thailand.
- National Statistical Office. (2005). *Thailand's elderly population in crisis*. Retrieved October 26, 2006, from [http://www.seniorcitizens.com/archives/2005/04/thailands\\_elder.html](http://www.seniorcitizens.com/archives/2005/04/thailands_elder.html).
- National Statistical Office. (2006). *Survey of elderly in Thailand*. Retrieved November 13, 2006, from <http://web.nso.go.th/eng/en/stat/aging/atab5.html>.

- Nayar, K. R., Kyobutungi, C., & Razum, O. (2004). Self-help: What future role in health care for low and middle-income countries? *International Journal for Equity in Health*, 3(1). Retrieved October 25, 2006, from <http://www.equityhealth.com/content/3/1/1>.
- Newell, C. (2007). *Living with diabetes is a team effort*. Retrieved February 4, 2007, from <http://www.diabetesaustralia.com.au/conquest/04Winter/0402-support.pdf>.
- Nomura, M., Makimoto, K., Kato, M., Shiba, T., Matsuura, C., Shigenobu, K., et al. (2007). Empowering the elderly with early dementia and family caregivers: A participatory action research study. *International Journal of Nursing Studies*. Retrieved September 28, 2007, from <http://www.sciencedirect.com>
- Northcott, H. C. (2005). *Aging in Alberta: Rhetoric and reality* (3<sup>rd</sup> ed.). Alberta, Canada: Detselig Enterprises.
- Norusis, M. J. (2002). *SPSS 11.0 guide to data analysis*. Chicago, IL: Prentice Hall.
- Nui. (2005). *Orality and literacy in Thailand*. Retrieved October 27, 2006, from <http://www.mcluhan.utoronto.ca/academy/olthailand/2005/01/paper-part-4-thai-cosmolog...>
- Nygren, B., Alex, L., Jonsen, E., Gustafson, Y., Norberg, A., & Lundman, B. (2005). Resilience, sense of coherence, purpose in life and self-transcendence in relation to perceived physical and mental health among the oldest old. *Aging & Mental Health*, 9(4), 354-362.
- Orem, D. E., Taylor, S. G., & Renpenning, K. M. (1995). *Nursing: Concepts of practice* (5<sup>th</sup> ed.). St. Louis, MO: Mosby-Year Book.
- Orem, D. E., Taylor, S. G., & Renpenning, K. M. (2001). *Nursing: Concepts of Practice* (6<sup>th</sup> ed.). St. Louis, MO: Mosby-Year Book.
- Overland, J., Yue, D. K., & Mira, M. (2001). Use of medicare services related to diabetes care: The impact of rural isolation. *The Australian Journal of Rural Health*, 9, 311-316.
- Parsons, J., Wilson, D., & Scardigno, A. (2000). *The impact of diabetes in South Australia: The summary*. Retrieved February 3, 2007, from <http://www.health.sa.gov.au/pros/portals/o/diabetes-summary.pdf>.

- Penning, M. J. (2002). Hydra revisited: Substituting formal for self- and informal in-home care among older adults with disabilities. *The Gerontologist*, 42(1), 4-16.
- Perron, B. (2002). Online support for caregivers of people with a mental illness. *Psychiatric Rehabilitation Journal*, 26(1), 70-77.
- Peterson, C. B. (2001). Self-help versus therapist-led group cognitive-behavioral treatment of binge eating disorder at follow-up. *International Journal of Eating Disorders*, 30(4), 363-374.
- Phra Nakhon Si Autthaya. (2007). *Key indications of the population and households. Population and Housing Census 1990 and 2000*. Retrieved August 1, 2007, from <http://web.nso.go.th/pop2000/finalrep/ayuthayafn.pdf>.
- Phromsaard, S., & Rotanaphraiwong, S. (2006). *Local administrative organizations and health promotion*. Thai Health Promotion Foundation.
- Phungrassami, T., Katikarn, R., Watanaarepornchai, S., & Sangtawan, D. (2004). Quality of life assessment in radiotherapy patients by WHOQOL-BREF-THAI: Feasibility study. *Journal of the Medical Association of Thailand*, 87(12), 1459-65.
- Pitayasak, C. (2004). *Development of self-care ability of type 2 diabetes mellitus patients in Ladyai Subdistrict, Muang District, Chaiyaphum Province*. Master's thesis, Khon Kean University, Thailand.
- Polit, D. F., Beck, C. T., & Hungler, B. P. (2001). *Essentials of nursing research: Methods, appraisal, and utilization* (5<sup>th</sup> ed.). Philadelphia: Lippincott.
- Polly, R. K. (1992). Diabetes health belief, self-care behaviors, and glycemic control among older adults with non-insulin-dependent diabetes mellitus. *The Diabetes Educator*, 18(4), 321-327.
- Polonsky, W. H. (2000). Understanding and assessing diabetes specific quality of life. *Diabetes Spectrum*, 13, 36. Retrieved December 19, 2006, from <http://journal.diabetes.org/diabetesspectrum/00v13n1/pg36.htm>.
- Powell, T. J., Yeaton, W., Hill, E. M., & Silk, K. R. (2001). The effect of self-help group participation. *Psychiatric Rehabilitation Journal*, 25(1), 3-11.

- Powwattana, A. (1994). *The effectiveness of participation in self-help group on self-care in patients with essential hypertension at Chiangrai Prachanukrur Hospital, Chiangrai Province*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Public Health Agency of Canada. (2001). *Canada's seniors*. Retrieved December 26, 2006, from [http://www.hc-sc.gc.ca/seniors-aines/pubs/factoids/2001/no01\\_e.htm](http://www.hc-sc.gc.ca/seniors-aines/pubs/factoids/2001/no01_e.htm).
- Public Health Agency of Canada. (2006). *Diabetes in Canada* (2<sup>nd</sup> ed.). Retrieved November 20, 2006, from [http://www.phac-aspc.gc.ca/publicat/dic-dac2/english/41chap5\\_e.html](http://www.phac-aspc.gc.ca/publicat/dic-dac2/english/41chap5_e.html).
- Pukwilai, S. (2002). *Effect of self-help group participation on self-esteem of post mastectomy patients receiving chemotherapy*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Ranzijn, R. (2002). Towards a positive psychology of ageing: Potentials and barriers. *Australian Psychologist*, 37(2), 79-85.
- Rapley, P., Passmore, A., & Phillips, M. (2003). Review of the psychometric properties of the diabetes self-efficacy scale: Australian longitudinal study. *Nursing and Health Sciences*, 5, 289-297. Retrieved February 16, 2007, from <http://www.blackwell-synergy.com/toc/nhs/5/4>.
- Rasmeeloung-on, J. (1992). *Effects of self-help group on self-esteem and self-care agency in head and neck cancer patients receiving radiotherapy*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Reenders, K. (2002). *Approaching primary care*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515930/ABSTRACT>.
- Resnicow, K. (2007). *Behavior change consortium*. Retrieved February 4, 2007, from <http://www1.od.nih.gov/behaviorchange/summary/bccsummaryreport.pdf>
- Rubin, R. R. (2000). Diabetes and quality of life. *Diabetes Spectrum*, 13, 21. Retrieved February 1, 2007, from <http://journal.diabetes.org/diabetesspectrum/00v13n1/pg21.htm>.

- Sabik, S. F. (2002). *An investigation of predictive model of self-management and quality of life in adults with non-insulin-dependent diabetes mellitus*. Doctoral dissertation, University of Arkansas, USA.
- Sagor, R. (1992). *How to conduct collaborative action research*. VI: Association for supervision and curriculum development.
- Sagor, R. (2005). *The action research guidebook: A four-step process for educators and school teams*. Thousand Oaks, CA: Corwin Press.
- Sariyaporn, A., Jinantuya, P., Pengjad, J., & Srisangar, K. (1995). *The study of psychosocial adaptation of the HIV infected persons participating in self-help group*. The Ministry of University affair.
- Saxena, S., Carlson, D., Billington, R., & Orley, J. (2001). The WHO quality of life assessment instrument (WHOQOL-Bref): The importance of its items for cross-cultural research. *Quality of Life Research, 10*, 711-721.
- Scambler, G. (2002). *Health and social change: A critical theory*. Buckingham, England: Open University Press.
- Schellenberg, G., Turcotte, M., & Ram, B. (2005). Post-retirement employment. Retrieved February, 2007, from <http://dsphttp://dsp-Collection-psd.pwgsc.gc.ca/R/Statcan/75-001-XIE/1090575-001-XIE.pdf>.
- Scholten, A. (2006). *Support groups: How do they help?* Retrieved February 3, 2007, from <http://healthlibrary.epnet.com/print.aspx?token=ece014d2-3f44-4e57-82b7-f23f2a536b80&chunkid=24805>.
- Schwartz, S. S. (2000). *The role of depression in adherence to treatment in a diabetic self-help group*. Doctoral dissertation, University of Sarasota, USA.
- Sclater, A. (2003). Diabetes in the elderly: The geriatrician's perspective. *Canadian Journal of Diabetes, 27*(2), 172-175.
- Seetamanotch, S., Sinchangchai, P., & Limchaiarunrang, S. (2004). Factor relating to access to universal health care coverage project among elderly in Phuket. *Journal of Health Science, 13*(1), 82-92.
- Seng, J. (1998). Praxis as a conceptual framework for participatory research in nursing: Quality and accountability in practice. *Advances in Nursing Science, 20*(4), 37-48.

- Shaw, B. A., Gallant, M. P., Riley-Jacome, M., & Spokane, L. S. (2006). Assessing sources of support for diabetes self-care in urban and rural underserved communities. *Journal of Community Health, 31*(5), 393-412. Retrieved February 5, 2007, from <http://www.springerlink.com/content/97p1231v2018n305/fulltext.pdf>.
- Siminerio, L. M., Piatt, G., & Zgibor, J. C. (2005). Implementing the chronic care model for improvements in diabetes care and education in a rural primary care practice. *The Diabetes Educator, 31*(2), 225-234.
- Sinclair, A. J. (2000). *Issues in the initial management of type 2 diabetes*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515924/ABSTRACT>.
- Sinclair, A. J., & Gadsby, R. (2002). *Diabetes in care homes*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515931/ABSTRACT>.
- Siviroj, P. (2000). *Development of organizational management model of elderly club for self-health care*. Unpublished doctoral dissertation, Mahidol University, Bangkok, Thailand.
- Skevington, S. M., Sartorius, N., Amir, M., & The WHOQOL-Group. (2004). Developing methods for assessing quality of life in different cultural settings: The history of the WHOQOL instruments. *Social Psychiatry and Psychiatric Epidemiology, 39*(1), 1-8.
- Smith, R. L. (2002). An evaluation of the man to man self help group in Colorado and Utah. *Cancer Practice, 10*(5), 234-239.
- Sneed, J. R., & Whitbourne, S. K. (2005). Models of the aging self. *Journal of Social Issues, 61*(2), 375-388.
- Soltis-Jarrett, V. (1997). The facilitator in participatory action research: Les raisons d'être. *Advances in Nursing Science, 20*(2), 45-54.
- Sorenson, L., & Yue, D. K. (2002). *Screening and treatment strategies for diabetes complications in elderly*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515917/ABSTRACT>.

- Sornngai, A. (1999). *Social mobilization for health promoting behavior development among the elderly in Phitsanulok Province*. Unpublished doctoral dissertation, Mahidol University, Bangkok, Thailand.
- South Community Health Centre. (2006). Diabetes self-management group pilot project. *Vancouver Health*, 1-9.
- Speziale, H. J. S., & Carpenter, D. R. (2003). *Qualitative research in nursing: Advancing the humanistic imperative* (3<sup>rd</sup> ed.). Philadelphia: Lippincott Williams & Wilkins.
- Srichairattanakul, J. (1998). *The effect of a self-help group on stress level in the first year nursing students, Boromrajonani College of Nursing, Chonburi*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Sritanyarat, W., Aroonsang, P., Charoenchai, A., Limumnoilap, S., Patanasri, K., Lertrat, P., et al. (2004). Health service system and health insurance for the elderly in Thailand: A knowledge synthesis. *Thai Journal of Nursing Research*, 8(2), 159-172.
- Statistics Canada. (2006). *Persons with diabetes by sex, by province*. Retrieved November 13, 2006, from <http://www40.statcan.ca/101/cst01/health54a.htm?sdi=diabetes>.
- Stewart, M. J. (2000). *Community nursing; Promoting Canadians' health* (2<sup>nd</sup> ed.). Toronto, Canada: Saunders.
- Strickland, O. L., & Dilorio, C. (2003). *Measurement of nursing outcomes* (2<sup>nd</sup> ed.). New York: Springer Publishing Company.
- Strickland, O. L., & Waltz, C. F. (1990). *Measurement of nursing outcomes*. New York: Springer Publishing Company.
- Sunvijit, S. (2005). *Design of health services for persons with diabetes mellitus through community participation*. Unpublished master's thesis, Khon Kaen University, Thailand.
- Surit, P. (2001). *Health beliefs, social support, and self-care behaviors of older Thai persons with non-insulin-dependent diabetes mellitus (NIDDM)*. Doctoral dissertation, The School of Nursing of the Catholic University of America, USA.

- Szinovacz, M. E., & Davey, A. (2005). Predictors of perceptions of involuntary retirement. *The Gerontologist*, 45(1), 36-47.
- Tangcharoensathien, V., Faramnuayphol, P., Teokul, W., Bundhamcharoen, K., & Wibulpholprasert, S. (2006). A critical assessment of mortality statistics in Thailand: Potential for improvements. *Bulletin of the World Health Organization*, 84(3), 233-238.
- Tay, J. B., Kelleher, C. C., Hope, A., Barry, M., Gabhainn, S. N., & Sixsmith, J. (2004). Influence of sociodemographic and neighbourhood factors on self rated health and quality of life in rural communities: Findings from the agriproject in the republic of Ireland. *Journal of Epidemiology and Community Health*, 58(11), 904-911. Retrieved February 5, 2007, from <http://jech.bmj.com/cgi/eletter-submit/58/11/904>.
- Techavanit, N. (2001). *Effects of a self-help group on depression in the elderly with primary hypertension*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Thai Information. (2006). *How to maintain support of the elders in the context of northeastern Thailand*. Retrieved October 27, 2006, from [http://www.uncwil.edu/gero/web\\_assisted/grn\\_assisted/grn\\_501/thai\\_information.htm](http://www.uncwil.edu/gero/web_assisted/grn_assisted/grn_501/thai_information.htm).
- Thai Ministry of Public Health. (2006). Retrieved October 26, 2006, from <http://ncd.ddc.moph.go.th>.
- Thailand Travelers. (2007). *Thai people manners*. Retrieved February 3, 2007, from <http://www.thailandtravelers.com/Thai-people.htm>.
- Thaniwattananon, P. (2001). The development of a health promotion model in elderly with diabetes mellitus: An action research project. *Thai Journal of Nursing Research*, 5(2), 183-198.
- The Daily. (2004). *Study: Seniors at work: An update*. Retrieved December 22, 2006, from <http://www.statcan.ca/Daily/English/040225/d040225d.htm>.
- The WHO Quality of Life Group. (1998). *RCMAR measurement tools: World Health Organization quality of life survey-abbreviated version (WHOQOL-BREF)*. Retrieved July 6, 2007, from <http://www.musc.edu/dfm/RCMAR/WHOQOLBREF.html>.

- Thompson, G., & Foth, D. (2005). Cognitive-training programs for older adults: What are they and can they enhance mental fitness? *Educational Gerontology, 31*, 603-626.
- Thorne, S. E., & Hayes, V. E. (1997). *Nursing praxis: Knowledge and action*. Thousand Oaks, CA: Sage.
- Tiampracha, W. (2004). *Development of pro-active primary care services for diabetes mellitus patients through community participation process of Ban-Wah Primary Care Unit, Muang District, Khon Kaen Province*. Unpublished master's thesis, Khon Kaen University, Thailand.
- Titchen, A. (1993). *Changing nursing practice through action research*. Oxford, England: National Institute for Nursing.
- Tobin, G. A., & Begley, C. M. (2004). Methodological rigor within a qualitative framework. *Journal of Advanced Nursing, 48*(4), 388-396.
- Tomey, A. M., & Alligood, M. R. (2006). *Nursing theorists and their work* (6<sup>th</sup> ed.). St. Louis, MO: Mosby.
- Torres, M. M., Torres, R. R. D., Rodriguez, A. M. P., & Dennis, C. L. (2003). Translation and validation of the breastfeeding self-efficacy scale into Spanish: Data from a Puerto Rican population. *Journal of Human Lactation, 19*(1), 35-42.
- Tripp, D. H. (1990). Socially critical action research. *Theory into Practice, 29*(3), 158-166.
- Troen, B. R. (2003). The biology of aging. *The Mount Sinai Journal of Medicine, 70*(1), 3-22.
- Trozzolino, L., Thompson, P. S., Tansman, M. S., & Azen, S. P. (2003). Effects of a psychoeducational group on mood and glycemic control in adults with diabetes and visual impairments. *Journal of Visual Impairment & Blindness, 97*(4), 230-239.
- Turnbull, C. J., & Sinclair, A. J. (2002). *Modern perspectives and recent advances*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515920/ABSTRACT>.

- Vancouver Health. (2006). *Diabetes self-management group: Pilot project-South CHC*. Retrieved February 4, 2007, from [http://www.vch.ca/ce/docs/reports/06\\_06\\_managing\\_diabetes.pdf](http://www.vch.ca/ce/docs/reports/06_06_managing_diabetes.pdf).
- Vinik, A., & Richardson, D. (2002). *Erectile dysfunction*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515920/ABSTRACT>.
- Vinik, A. I., & Zhang, Q. (2007). Adding insulin Glargine versus Rosiglitazone: Health-related quality-of-life impact in type 2 diabetes. *Diabetes Care*, *30*(4), 795-800.
- Vogel, H. S. (1998). Double trouble in recovery: Self-help for people with dual diagnoses. *Psychiatric Rehabilitation Journal*, *21*(4), 356-364.
- Wagner, W. E. (2007). *Using SPSS for social statistics and research methods*. Thousand Oaks, CA: Pine Forge Press.
- Walker, A. (2005a). *Growing older: Ageing well quality of life in old age*. Berkshire: Open University Press.
- Walker, A. (2005b). *Growing older: Understanding quality of life in old age*. Berkshire: Open University Press.
- Wattana, C., Srisuphan, W., Pothiban, L., & Upchurch, S. L. (2007). Effects of a diabetes self-management program on glycemic control, coronary heart disease risk, and quality of life among Thai patients with type 2 diabetes. *Nursing and Health Sciences*, *9*, 135-141.
- Watson, J., Obersteller, E. A., Rennie, L., & Whitbread, C. (2001). Diabetic foot care: Developing culturally appropriate educational tools for Aboriginal and Torres Strait Islander peoples in the Northern Territory, Australia. *The Australian Journal of Rural Health*, *9*, 121-126.
- Wens, J., Vermeire, E., Royen, P. V., Sabbe, B., & Denekens, J. (2005). GPs' perspectives of type 2 diabetes patients' adherence to treatment: A qualitative analysis of barriers and solutions. *BMC Family Practice*, *6*(20). Retrieved February 5, 2007, from <http://www.biomedcentral.com/1471-2296/6/20>.

- White, B. (1999). Improving chronic disease care in the real world: A step-by-step approach. *Family Practice Management*, 6(9). Retrieved February 5, 2007, from <http://www.aafp.org/fpm/991000fm/38.html>.
- WHO. (1999). *Ageing: Exploding the myths*. Retrieved February 6, 2007, from [http://whqlibdoc.who.int/hq/1999/WHO\\_HSC\\_AHE\\_99.1.pdf](http://whqlibdoc.who.int/hq/1999/WHO_HSC_AHE_99.1.pdf).
- WHO. (2000). *Active ageing makes the difference*. Retrieved February 6, 2007, from [http://www.who.int/ageing/publications/alc\\_embrace2001\\_en.pdf](http://www.who.int/ageing/publications/alc_embrace2001_en.pdf).
- WHO. (2001a). *The global embrace: Ageing and life course*. Retrieved October 25, 2006, from [http://www.who.int/ageing/global\\_movement/](http://www.who.int/ageing/global_movement/).
- WHO. (2001b). *WHO's campaign for active ageing*. Retrieved February 6, 2007, from [http://whqlibdoc.who.int/hq/2001/WHO\\_NMH\\_NPH\\_01.3.pdf](http://whqlibdoc.who.int/hq/2001/WHO_NMH_NPH_01.3.pdf).
- WHO. (2002). *Active ageing: A policy framework*. Retrieved February 6, 2007, from <http://www.euro.who.int/document/hea/eactagepolframe.pdf>.
- WHO. (2004a). *Active ageing: Towards age-friendly primary health care*. Retrieved February 6, 2007, from <http://whqlibdoc.who.int/publications/2004/9241592184.pdf>.
- WHO. (2004b). *The World Health Organization Quality of Life (WHOQOL) – BREF* (English). Retrieved February 1, 2007, from [https://www.who.int/substance\\_abuse/research\\_tools/en/english\\_whoqol.pdf](https://www.who.int/substance_abuse/research_tools/en/english_whoqol.pdf).
- WHO. (2004c). *The World Health Organization Quality of Life (WHOQOL) – BREF* (Thai). Retrieved February 1, 2007, from [https://www.who.int/substance\\_abuse/research\\_tools/en/thai\\_whoqol.pdf](https://www.who.int/substance_abuse/research_tools/en/thai_whoqol.pdf).
- WHO. (2005). *WHA58.16: Strengthening active and healthy ageing*. Retrieved February 6, 2007, from [http://www.who.int/gb/ebwha/pdf\\_files/WHA58/16-en.pdf](http://www.who.int/gb/ebwha/pdf_files/WHA58/16-en.pdf).
- WHO. (2006a). *Country and regional data world*. Retrieved October 25, 2006, from [http://www.who.int/diabetes/facts/world\\_figures/en/index.html](http://www.who.int/diabetes/facts/world_figures/en/index.html).
- WHO. (2006b). *Diabetes*. Retrieved October 25, 2006, from <http://www.who.int/mediacentre/factsheets/fs312/en/index.html>.
- WHO. (2006c). *Diabetes: EMRO strategies for diabetes control and prevention*. Retrieved November 15, 2006, from <http://www.who.int/ncd/diabetes-introduction.htm>.

- WHO. (2006d). *Diabetes program*. Retrieved October 25, 2006, from <http://www.who.int/diabetes/en/index.html>.
- WHO. (2006e). *Frequently asked questions*. Retrieved October 29, 2006, from <http://www.who.int/suggestions/faq/en/>.
- WHO. (2006f). *WHO European region*. Retrieved November 15, 2006, from [http://www.who.int/diabetes/facts/world\\_figures/en/index4.html](http://www.who.int/diabetes/facts/world_figures/en/index4.html).
- WHO. (2006g). *WHO region of the Americas*. Retrieved November 15, 2006, from [http://www.who.int/diabetes/facts/world\\_figures/en/index3.html](http://www.who.int/diabetes/facts/world_figures/en/index3.html).
- WHO. (2006h). *WHO South-East Asia region*. Retrieved October 25, 2006, from [http://www.who.int/diabetes/facts/world\\_figures/en/index5.html](http://www.who.int/diabetes/facts/world_figures/en/index5.html).
- WHO. (2006i). *WHO Western Pacific region*. Retrieved November 15, 2006, from [http://www.who.int/diabetes/facts/world\\_figures/en/index6.html](http://www.who.int/diabetes/facts/world_figures/en/index6.html).
- WHO. (2007g). *World Health Organization definition*. Retrieved January 12, 2007, from <http://www.fda.gov/ohrms/dockets/ac/00/slides/3591s1a/tsld016.htm>.
- WHO. (2007a). *Abuse of the elderly*. Retrieved February 3, 2007, from [http://www.who.int/violence\\_injury\\_prevention/violence/global\\_campaign/en/chap5.pdf](http://www.who.int/violence_injury_prevention/violence/global_campaign/en/chap5.pdf).
- WHO. (2007b). *Quality of Life*. Retrieved January 12, 2007, from [http://www.riancercouncil.org/editorials/generalquality\\_of\\_life.doc](http://www.riancercouncil.org/editorials/generalquality_of_life.doc).
- WHO. (2007c). *Quality of life and people's participation in development-A REVIEW*. Retrieved February 1, 2007, from <http://krpods.org/report/people.pdf>.
- WHO. (2007d). *The Bangkok charter for health promotion in a globalised world*. Retrieved February 4, 2007, from [http://www.who.int/healthpromotion/conferences/6gchp/bangkok\\_charter/en/index.html](http://www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/index.html).
- WHO. (2007e). *WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment*. Geneva: World Health Organization. Retrieved June 25, 2007, from <http://www.popcouncil.org/Horizons/AIDSquest/instruments/whoqolbref.pdf>
- WHO. (2007f). *WHOQOL: Measuring quality of life*. Retrieved July 10, 2007, from [https://www.who.int/mental\\_health/media/68.pdf](https://www.who.int/mental_health/media/68.pdf).
- Whyte, W. F. (1991). *Participatory action research*. Los Angeles: Sage.

- Wiens, C. (2007). *Perspectives on aging-physiologic changes with aging*. The University of Alberta, Canada.
- Wild, S., Roglic, G., Green, A., Sicree, R., & King, H. (2004). Global prevalence of diabetes: Estimates for the year 2000 and projections for 2030. *Diabetes Care*, 27(5), 1047-1053.
- Wilson, P. M., & Mayor, V. (2006). Long-term conditions. 2: Supporting and enabling self-care. *British Journal of Community Nursing*, 11(1), 6-10.
- Wituk, S., Shepherd, M. D., Slavich, S., Warren, M. L., & Meissen, G. (2000). A topography of self-help groups: An empirical analysis. *Social Work*, 45(2), 157-165.
- Wong, M., Haswell-Elkins, M., Tamwoy, E., McDermott, R., & d'Abbs, P. (2005). Perspectives on clinic attendance, medication and foot-care among people with diabetes in the Torres Strait Islands and Northern Peninsula area. *The Australian Journal of Rural Health*, 13, 172-177.
- Wongsith, M., & Siriboon, S. (1999). *Family and elderly: Case study of Bangkok and Phranakorn Sri Ayuddhaya*. College of Population Studies, Chulalongkorn University, Thailand.
- Wongsook, K. (1998). *The effectiveness of self-help group on health promotion behavior in HIV infected patients of Pramongkutklou Hospital*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Yaiwong, S. (2003). *Empowerment for blood sugar control in diabetic patients, type 2: Case study at diabetic clinic, Chun Hospital, Phayao Province*. Unpublished master's thesis, Mahidol University, Bangkok, Thailand.
- Young, M. J., & Boulton, A. J. M. (2002). *The diabetic foot*. Retrieved October 27, 2006, from <http://www3.interscience.wiley.com/cgi-bin/abstract/93515919/ABSTRACT>.
- Yu, D. S. F., Lee, D. T. F., & Woo, J. (2003). Translation of the chronic heart failure questionnaire. *Applied Nursing Research*, 16(4), 278-283.
- กระทรวงสาธารณสุข. (2541). (Ministry of Public Health, 1998). *การพยาบาลผู้ใหญ่และผู้สูงอายุเล่ม 1*. นนทบุรี: บุชรินทร์การพิมพ์.

- กระทรวงสาธารณสุข. (2552). (Ministry of Public Health, 2009). *แผน 10: ยุทธศาสตร์สุขภาพพอเพียง*. Retrieved May 26, 2009, from [http://www.moph.go.th/other/inform/10/plan\\_10.pdf](http://www.moph.go.th/other/inform/10/plan_10.pdf).
- กรมสุขภาพจิต กระทรวงสาธารณสุข. (2550). (Ministry of Public Health, 2007). *เครื่องชี้วัดคุณภาพชีวิตขององค์การอนามัยโลกชุดย่อ ฉบับภาษาไทย (WHOQOL-BREF THAI)*. Retrieved June 22, 2007, from <http://www.dmh.moph.go.th/test/whoqol/>.
- จันทร์เพ็ญ ชูประภาวรรณ. (2543). (Chuprapawun, J., 2000). *สถานะสุขภาพคนไทย*. กรุงเทพฯ: อุกาการพิมพ์.
- เทพ หิมะทองคำ และคณะ. (2550). (Himathongcum, T. et al., 2007). *ความรู้เรื่องเบาหวาน ฉบับสมบูรณ์ (3<sup>rd</sup> ed.)*. กรุงเทพฯ: บริษัทวิทยพัฒน์.
- มหาวิทยาลัยมหิดล. (2550). (Mahidol University, 2007). *ผลสำรวจประชากรผู้สูงอายุไทย*. สถาบันวิจัยประชากรและสังคม มหาวิทยาลัยมหิดล.
- ลือชัย ศรีเงินยวง. (2545). (Srinyung, L., 2002). *ภาคประชาชนกับสุขภาพ: บทบาททวนวรรณกรรมว่าด้วยการเคลื่อนไหวทางสังคมเพื่อการดูแลสุขภาพตนเอง*. นครปฐม: คณะสังคมศาสตร์การแพทย์และสาธารณสุข มหาวิทยาลัยมหิดล.
- ลือชัย ศรีเงินยวง, พิมลพรรณ อุโฆษกิจ, เพ็ญจันทร์ ประดับมุข, และกัญญารัตน์ กล้าถนอม. (2535). (Srinyung, L., Pimonpan, U., Pradubmuk, P. & Klumthanom, K. (1992) *บริการสุขภาพเพื่อผู้ป่วยเรื้อรัง: บทเรียนจากกรณีศึกษา การรับรู้ ความเชื่อ และเงื่อนไขชีวิตของผู้ป่วยเบาหวาน*. นครปฐม: คณะสังคมศาสตร์การแพทย์และสาธารณสุขมหาวิทยาลัยมหิดล.
- ส่วนข้อมูลข่าวสารสาธารณสุข สำนักนโยบายและแผนสาธารณสุข สำนักปลัดกระทรวงสาธารณสุข. (2542). (Thai Public Health Plan and Policy, 1999). *การสาธารณสุขไทย พ. ศ. 2540-2541*. กรุงเทพฯ: โรงพิมพ์องค์การรับส่งสินค้าและพัสดุ.

## **APPENDIX**

**APPENDIX A**  
**DOCUMENTARY PROOF OF MAHIDOL UNIVERSITY**  
**INSTITUTIONAL REVIEW BOARD (MU-IRB)**



COA. No. MU-IRB 2008/045.0307

Documentary Proof of Mahidol University Institutional Review Board

**Title of Project:** Enhancing Self-Care Ability and Quality of Life among Rural-Dwelling Thai Elders with Type 2 Diabetes through a Self-Help Group. A Participatory Action Research Approach  
(Thesis for Ph.D.)

**Principle Investigator:** Miss Arissara Sukwatjane

**Name of Institution:** Faculty of Nursing

**Approval includes:** 1) MU-IRB Submission form version received date 1 July 2008  
2) Participant Information sheet version date 1 July 2008  
3) Informed consent form version date 1 July 2008  
4) Questionnaire version received date 8 May 2008

Mahidol University Institutional Review Board is in full compliance with International Guidelines for Human Research Protection such as Declaration of Helsinki, The Belmont Report, CIOMS Guidelines and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

**Date of Approval:** 3 July 2008

**Date of Expiration:** 2 July 2009

**Signature of Chairman:** ..... *Shusee Visalyaputra* .....  
(Professor Shusee Visalyaputra)

**Signature of Head of the Institute:** ..... *S. Chaiyaroj* .....  
(Associate Professor Sansanee Chaiyaroj)  
Vice President for Research and Academic Affairs

Office of the President, Mahidol University, 999 Phuttamonthon 4 Rd., Salaya, Phuttamonthon District, Nakhon Pathom 73170. Tel. (662) 8496241-6 Fax. (662) 8496247

## **APPENDIX B**

### **PARTICIPANT INFORMATION SHEET**

The Researcher names Miss Arissara Sukwatjane, doctoral student in the Doctor of Philosophy Program in Nursing, Mahidol University.

**Title of the Study** is “enhancing self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes through a self-help group: A participatory action research approach”.

#### **Purpose and Procedure of the Study**

The purpose of the study is to investigate the impact of participating in a self-help group through a participatory action research on enhancing self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes.

#### **Reasons of Invitation to be Participants of the Study**

You meet the criteria of the research participants that are Thai elders with type 2 diabetes living in a rural village in Bang Pa Han District, Ayutthaya Province. Your age is 60 years old and older, having able to communicate and willing to participate in the self-help group.

#### **Procedure of the Study**

You and your friends in the diabetic clinic will collaborative working with the researcher in establishing a self-help group. The group activities compose exercising, listening to a diabetic self-care presentation, sharing your experiences about diabetic self-care to other members, and discussing about problems in diabetic self-care and other health problems. The group activities would have more than this depends on the brainstorming among group members and the researcher. You would meet other members and the researcher at two-hour group meetings every two weeks, 12 times for six months. There is no expense for group members. Free transportation service will be provided to members who cannot go to the meetings by themselves. Snack and water will also be provided during meetings. At initial meetings, you will complete three sets of checklist questionnaires of personal information, quality of life

and diabetes-self efficacy scale. The researcher will also ask for your last blood sugar levels that tested from the diabetic clinic. The questionnaires will take about 15-30 minutes to complete and you can ask for taking a break during this period of time. The questionnaires will be read out and the researcher and the research assistant (a registered nurse of the primary care unit) will record your responses for further data analysis.

At every group meetings, you will participate in focus group discussion with the researcher and the research assistant. A few questions ask about your perceptions of participating in the self-help group. The focus group discussion will be audiotape-recorded for further content analysis and will not last longer than two hours per time.

At last meeting after the self-help group is established for six months, you will complete the questionnaires of quality of life and diabetes-self efficacy scale again. Your blood sugar levels will be asked. You will also receive the explanation about the research results at the end of the study.

### **Duration of the Study**

You will participate in the self-help group for six months. If you think participating in the self-help group is helpful to you, you can continue the participating by yourself; the researcher and the registered nurse of the primary care unit are please to be a consultant.

### **Proposed Benefits of the Study**

1. You would gain knowledge, problem solving and handicap about diabetic self-care that would improve your diabetic self-care ability and quality of life.
2. For nursing, the findings of this study will be disseminated through scholarly publications to help elders with type 2 diabetes better self-manage their diabetes.

### **Proposed Risks of the Study**

This study is the participation among members of the self-help group. Most group activities are meetings for sharing experiences of diabetic self-care among members. You might feel that you waste your time to participate in the two-hour meeting every two weeks for six months. You may be unwilling in answering some questions in focus group discussion. You can deny answering for the questionnaires and interview questions that upset to you.

**Confidential Issue**

The personal information you provide will be held strictly confidential. Your names, the name of your community and primary care unit will not appear on any reports. You will be identifiable only by your age and gender. The audiotape of interviews will be kept secure in a locked place by the researcher and immediately erased after transcription. The contents of interview transcriptions will also be kept confidential by the researcher in a locked place at the researchers' office at Faculty of Nursing of Srinakharinwirot University, Nakhonnayok Province, for five years before damaging. These transcriptions will only be accessed by the researcher and that it will not be possible to match your personal information with the consent form. The researcher will also ask your permission to ask for the results of your blood glucose levels from your diabetic clinic of your primary care unit.

**Health Care Service**

If you are ill during participating in the meetings such as fainting, you will be supported for fee charge of your health service by the researcher and the registered nurse of the primary care unit.

**Right to Withdraw from the Study**

You will be informed of your right to drop out of participation in the self-help group at any time if you feel unable to continue. The dismissed study will not affect your receiving of care at any health services. You are also free to refuse to answer any question you are not comfortable with.

**Contacted Information of the Researcher**

If you have concerns or questions about the study, you can contact the researcher at 35 Moo 5 Mahapram, Bangban District, Ayutthaya 13250. Telephone number are (035) 307-837 and (089) 911-1400 every day and all day.

If you have any complaints about the study, you may contact Associate Professor Dr. Kanaungnit Pongthavornkamol, the major adviser, Department of Medical Nursing, Faculty of Nursing at Mahidol University, Bangkok Noi, Bangkok 10700. Telephone number is (081) 297-7487 every day between 9:00 am to 21:00 pm.

This study is proofed by Mahidol University Institutional Review Board. If you have any complaints about the study, you may contact the Chairman of Mahidol University Institutional Review Board at the Office of the President, Mahidol

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University, Salaya, Phuttamonthon District, Nakhon Pathom 73170. Telephone number is 0-2849-6241-6 at office time; Fax is 02-849-6247.

## PARTICIPANT INFORMATION SHEET (THAI)

### เอกสารชี้แจงผู้เข้าร่วมโครงการวิจัย

ผู้วิจัยชื่อ นางสาวอริสรา สุขวังณี เป็นนักศึกษาปริญญาเอกสาขาการพยาบาล โครงการร่วมคณะ แพทยศาสตร์โรงพยาบาลรามาธิบดีและคณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

**ทำโครงการวิจัยเรื่อง** การส่งเสริมความสามารถในการดูแลตนเองและคุณภาพชีวิตของผู้สูงอายุไทยใน ชนบทที่เป็นโรคเบาหวานชนิดที่สองโดยกลุ่มช่วยเหลือตนเอง: การวิจัยเชิงปฏิบัติการแบบมีส่วนร่วม **วัตถุประสงค์และวิธีการวิจัย**

วัตถุประสงค์ของการวิจัยคือเพื่อส่งเสริมความสามารถในการดูแลตนเองและคุณภาพชีวิตของ ผู้สูงอายุไทยในชนบทที่เป็น โรคเบาหวานชนิดที่สองโดยกลุ่มช่วยเหลือตนเอง


**เหตุผลที่เชิญชวนให้ท่านเข้าโครงการวิจัย**

เนื่องจากท่านมีคุณสมบัติตรงกับผู้ร่วมวิจัยที่ต้องการทำการวิจัยคือ เป็นผู้สูงอายุไทยที่เป็น โรคเบาหวานชนิดที่สองที่อาศัยอยู่ในชนบท มีอายุ 60 ปีขึ้นไป สามารถได้ยินเสียงและพูดคุยได้ตอบได้ รู้เรื่อง และสมัครใจที่จะเข้าร่วมกลุ่มช่วยเหลือตนเอง

**วิธีการวิจัย**

ท่านและผู้สูงอายุที่เป็นเบาหวานท่านอื่นที่มาตรวจที่คลินิกเบาหวานเช่นเดียวกับท่านจะร่วมกับ ผู้วิจัยก่อตั้งกลุ่มช่วยเหลือตนเองขึ้นมา เพื่อเป็นการพบปะสังสรรค์พูดคุยแลกเปลี่ยนประสบการณ์การดูแล ตนเองเมื่อเป็นเบาหวาน การปรึกษาหารือกันเรื่องปัญหาและอุปสรรคในการดูแลตนเองตลอดจนปัญหา สุขภาพอื่นๆและทำกิจกรรมของกลุ่มร่วมกัน ตัวอย่างกิจกรรมของกลุ่มได้แก่ การฝึกทำออกกำลังกาย ด้วยกัน การฟังการบรรยายเกี่ยวกับการดูแลตนเองเมื่อเป็นเบาหวานและหัวข้ออื่นๆที่ท่านสนใจ กิจกรรมของกลุ่มอาจมีมากกว่านี้ทั้งนี้ขึ้นอยู่กับข้อตกลงกันของสมาชิกกลุ่ม จะมีการใช้อุปกรณ์ บันทึกลงเสียงการพูดคุยกันระหว่างท่านและสมาชิกกลุ่มท่านอื่นและผู้วิจัยขณะประชุมกลุ่มเพื่อ ประกอบการประเมินผลการวิจัยของผู้วิจัย จะมีการนัดพบกันระหว่างท่านและสมาชิกกลุ่มท่านอื่นและ ผู้วิจัยทั้งหมด 12 ครั้งในช่วงเวลา 6 เดือน โดยพบกันทุกสองสัปดาห์และใช้เวลาพบปะสังสรรค์กันครั้งละ สองชั่วโมง ทั้งนี้วัน เวลาและสถานที่ในการพบกันขึ้นอยู่กับข้อตกลงกันระหว่างท่านและสมาชิกกลุ่ม ท่านอื่น ท่านจะไม่เสียค่าใช้จ่ายใดๆในการเป็นสมาชิกกลุ่มช่วยเหลือตนเอง และจะมีการให้บริการรถ รับส่ง อาหารและน้ำดื่มแก่สมาชิกกลุ่มทุกท่านที่มาประชุมกลุ่มทุกครั้งโดยผู้วิจัย

ในการเข้าร่วมการวิจัยช่วงแรกก่อนที่ท่านจะเข้าร่วมกลุ่มช่วยเหลือตนเองท่านและผู้สูงอายุที่เป็น เบาหวานท่านอื่นจะได้ตอบแบบสอบถามสามชุดซึ่งถามเกี่ยวกับข้อมูลส่วนตัว การรับรู้เกี่ยวกับคุณภาพ ชีวิต ความมั่นใจในความสามารถการดูแลตนเองเมื่อเป็นเบาหวาน ผู้วิจัยจะขอบันทึกผลการตรวจระดับ น้ำตาลในเลือดครั้งสุดท้ายที่ท่านได้มีการเจาะตรวจตามกำหนดที่คลินิกเบาหวานจากสมุดประจำตัวของ

	รับรองโดยคณะกรรมการจริยธรรมการวิจัยในคน
	มหาวิทยาลัยมหิดล
	รหัสโครงการ MU-IRB... ๕๐๐๘ / ๐๔๕ ๐๓๐๗
	วันที่... ๕ กรกฎาคม ๒๕๕๑

ท่าน และเมื่อสิ้นสุดการวิจัยหรือหลังจากที่ท่านเข้าร่วมกลุ่มช่วยเหลือตนเองเป็นเวลาหกเดือนท่านและผู้สูงอายุที่เป็นเบาหวานท่านอื่นจะได้ตอบแบบสอบถามสองชุดซึ่งถามการรับรู้เกี่ยวกับคุณภาพชีวิต ความมั่นใจในความสามารถการดูแลตนเองเมื่อเป็นเบาหวาน ผู้วิจัยจะขอบันทึกผลการตรวจระดับน้ำตาลครั้งหลังสุดที่ท่านได้มีการเจาะตรวจตามกำหนดที่คลินิกเบาหวานจากสมุดประจำตัวของท่านอีกครั้ง ท่านจะใช้เวลาในการตอบแบบสอบถามทั้งหมดประมาณ 15-30 นาทีและขอพักระหว่างตอบคำถามได้ โดยผู้วิจัยและผู้ช่วยวิจัยซึ่งเป็นพยาบาลสาธารณสุขของสถานีนามัยจะอ่านคำถามให้ท่านฟังและบันทึกการตอบคำถามของท่านเพื่อนำข้อมูลไปประเมินผลการวิจัยและจะมีการแจ้งผลการวิจัยในภาพรวมให้ท่านทราบหลังสิ้นสุดการวิจัย

**ระยะเวลาที่ต้องทำการทดสอบท่านให้ทำการวิจัย**

ท่านจะได้เข้ากลุ่มช่วยเหลือตนเองเป็นเวลาหกเดือน หากท่านคิดว่ากลุ่มช่วยเหลือตนเองให้ประโยชน์ท่านก็สามารถดำเนินการกลุ่มช่วยเหลือตนเองนี้ต่อไป โดยผู้วิจัยมีความยินดีในการให้คำปรึกษาและหาแหล่งทุนสนับสนุน

**ประโยชน์ที่คาดว่าจะเกิดขึ้นทั้งต่อท่านและต่อผู้อื่น**

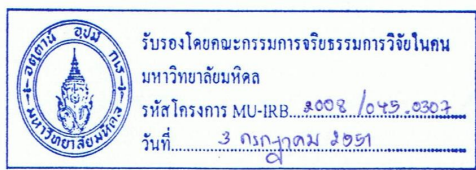
1. ท่านจะได้รับความรู้และวิธีการแก้ปัญหาและอุปสรรคเกี่ยวกับการดูแลตนเองเมื่อเป็นเบาหวานจากการเข้ากลุ่มช่วยเหลือตนเองซึ่งอาจส่งผลให้ท่านเกิดการพัฒนาความสามารถในการดูแลตนเองและมีคุณภาพชีวิตที่ดีขึ้น
2. สำหรับการพยาบาล ผลการวิจัยนี้จะถูกตีพิมพ์เผยแพร่เป็นผลงานวิชาการสำหรับปรับปรุงแผนรักษาและการดูแลผู้สูงอายุที่เป็นเบาหวานชนิดที่สองกลุ่มอื่นต่อไป

**ความเสี่ยงหรือความไม่สบายที่คาดว่าจะเกิดขึ้นกับท่านในการเข้าร่วมวิจัย**

การวิจัยนี้เป็นการเข้าร่วมกลุ่มช่วยเหลือตนเองโดยกิจกรรมของกลุ่มเป็นการนัดพบปะสังสรรค์เพื่อคุยแลกเปลี่ยนประสบการณ์การดูแลตนเองเมื่อเป็นเบาหวานระหว่างสมาชิก ท่านอาจต้องเสียเวลาในการมาเข้าประชุมกลุ่มทุกสองสัปดาห์นานครั้งละสองชั่วโมงทั้งหมด 12 ครั้งเป็นเวลาต่อเนื่องกันหกเดือน ท่านอาจรู้สึกอึดอัดใจในการตอบคำถามในแบบสอบถามและการสนทนากลุ่มบางคำถามบ้าง ซึ่งท่านอาจไม่ตอบคำถามใดก็ได้ที่ท่านรู้สึกอึดอัดใจที่จะตอบ

**ขอบเขตการดูแลรักษาความลับของข้อมูลต่างๆของท่าน**

ข้อมูลส่วนตัวทั้งหมดที่ได้รับจากท่านจะถูกรักษาไว้เป็นความลับ จะไม่มีการเปิดเผยชื่อของท่าน ชื่อหมู่บ้านที่พักอาศัยและชื่อสถานีนามัยที่ท่านใช้บริการตรวจรักษาโรคเบาหวาน ข้อมูลส่วนตัวของท่านที่จะถูกเปิดเผยมีเพียงเพศและอายุเท่านั้น เทปที่บันทึกเสียงการพูดคุยของท่านและสมาชิกกลุ่มท่านอื่นขณะสนทนากลุ่มจะถูกเก็บไว้ในลิ้นชักซึ่งล็อกกุญแจและเทปที่บันทึกเสียงนี้จะถูกทำลายทันทีหลังจากผู้วิจัยได้ถอดเทปบันทึกเสียงแล้ว เอกสารที่เป็นข้อมูลการถอดเทปบันทึกเสียงจะถูกเก็บไว้ใน



ลินซ์ก์โต๊ะทำงานซึ่งถือคฤงเจงของผู้วิจัยที่คณะพยาบาลศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ จังหวัดนครนายก เอกสารที่เป็นข้อมูลการถอดเทปบันทึกเสียงนี้จะถูกเก็บแยกไว้ต่างหากจากข้อมูลส่วนตัวและแบบฟอร์มที่ให้ท่านลงนามเข้าร่วมในการวิจัย เอกสารนี้จะถูกเก็บรักษาไว้เป็นเวลาห้าปีแล้วทำลาย การขอทราบข้อมูลผลตรวจระดับน้ำตาลในเลือดของท่านที่สถานีอนามัยจะทำในกรณีที่ท่านอนุญาตแล้วเท่านั้น

#### การดูแลรักษาที่ผู้วิจัยจะจัดให้

หากขณะเข้าประชุมกลุ่มช่วยเหลือตนเองท่านมีอาการผิดปกติ เช่น หน้ามืด ใจเต้นและเป็นลม ท่านจะได้รับการช่วยเหลือทันทีโดยผู้วิจัยและพยาบาลสาธารณสุขของสถานีอนามัยโดยไม่คิดค่ารักษาพยาบาล

#### สิทธิของท่านจะถอนตัวออกจากโครงการวิจัย

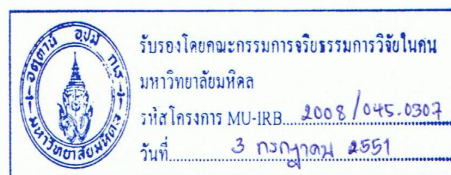
ท่านสามารถถอนตัวจากการเข้ากลุ่มช่วยเหลือตนเองได้ตลอดเวลาถ้ามีความไม่สะดวก โดยไม่กระทบต่อการดูแลรักษาปกติที่ได้รับจากสถานีอนามัยหรือสถานบริการตรวจรักษาสุขภาพอื่น และท่านไม่จำเป็นต้องตอบคำถามสำหรับข้อคำถามที่ทำให้ไม่สบายใจที่จะตอบในแบบสอบถามหรือการสนทนากลุ่ม

#### ชื่อ ที่อยู่และเบอร์โทรศัพท์ของผู้วิจัย

หากท่านมีข้อสงสัยใดๆสามารถติดต่อสอบถามผู้วิจัยได้ที่ บ้านเลขที่ 35 หมู่ที่ 5 ตำบลมหาพราหมณ์ อำเภอบางบาล จังหวัดพระนครศรีอยุธยา 13250 เบอร์โทรศัพท์ (035) 307-837 และ (089) 911-1400 ได้ทุกวันทั้งในและนอกราชการ

หรืออาจติดต่อกับรองศาสตราจารย์ ดร. คณิงนิง พงศ์ถาวรภมม ผู้เป็นอาจารย์ที่ปรึกษาของผู้วิจัยได้ที่ ภาควิชาการพยาบาลอายุรศาสตร์ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล เขตบางกอกน้อย กรุงเทพฯ 10700 เบอร์โทรศัพท์ (081) 297-7487 ทุกวัน เวลา 9.00-21.00 น.

โครงการวิจัยนี้ได้รับการพิจารณารับรองจาก คณะกรรมการจริยธรรมการวิจัยในคน มหาวิทยาลัยมหิดล หากท่านได้รับการปฏิบัติไม่ตรงตามที่ระบุไว้ในเอกสารนี้ ท่านสามารถติดต่อกับคณะกรรมการจริยธรรมการวิจัยในคนมหาวิทยาลัยมหิดลได้ที่ สำนักงานคณะกรรมการจริยธรรมการวิจัยในคน กองบริหารงานวิจัย สำนักงานอธิการบดีมหาวิทยาลัยมหิดล ตำบลศาลายา อำเภอบุพพัทฒนณฑล จังหวัดนครปฐม 73170 หมายเลขโทรศัพท์ 0-2849-6241-6 ในวันและเวลาราชการ โทรสาร 02-849-6247



## **APPENDIX C**

### **INFORMED CONSENT FORM**

Date.....

Name.....Age..... Address.....

Street.....Sub District.....District.....

Province.....Zip Code.....Telephone.....

I am glad to participate in the study that is “enhancing self-care ability and quality of life among rural-dwelling Thai elders with type 2 diabetes through a self-help group: A participatory action research approach”.

I already understand the purpose, procedure, benefits and, proposed risks of the study.

I understand that the researcher will answer me any questions until I am satisfied.

I understand that my participation is voluntary and that I may change my mind and refuse to participate or withdraw at any time without penalty.

I understand that any data or answers to questions will remain confidential with regard to my identity. I understand that some of the things that I say may be directly quoted in the text of the final report, and subsequent publications, but my name will not be associated with that text.

I understand that I do not have to pay for some risk expenses resulting from the study.

I understand that the researcher will inform me more the thing that effects to the study.

If I have concerns or questions about the study, I can contact the researcher, Miss Arissara Sukwatjane, at 35 Moo 5 Mahapram, Bangban District, Ayutthaya 13250. Telephone number are (035) 307-837 and (089) 911-1400 every day and all day.

If I have any complaints about the study, I may contact the Chairman of Mahidol University Institutional Review Board at the Office of the President, Mahidol University, Salaya, Phuttamonthon District, Nakhon Pathom 73170. Telephone number is 0-2849-6241-6 at office time; Fax is 02-849-6247.

I hereby agree to participate in the above study.

.....Participant's signature    Date.....

.....Researcher's signature    Date.....

In case that the participants cannot read and write, they must consciously agree to participate the study. The researcher had read this consent form to me and I hereby agree to participate in the above study.

..... Participant's finger print

.....Witness's signature

.....Witness's signature

## INFORMED CONSENT FORM (THAI)

### หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย

วันที่..... เดือน..... พ.ศ.....

ข้าพเจ้า.....อายุ.....ปี อาศัยอยู่บ้านเลขที่.....  
 ถนน.....ตำบล.....อำเภอ.....  
 จังหวัด.....รหัสไปรษณีย์..... โทรศัพท์ .....

ขอแสดงเจตนายินยอมเข้าร่วม โครงการวิจัยเรื่อง “การสนับสนุนความสามารถในการดูแลตนเองและคุณภาพชีวิตของผู้สูงอายุไทย ในชนบทที่เป็นโรคเบาหวานชนิดที่สองโดยกลุ่มช่วยเหลือตนเอง: การวิจัยเชิงปฏิบัติการแบบมีส่วนร่วม” ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย อันตราย หรืออาการที่อาจเกิดขึ้นจากการวิจัยหรือจากยาที่ใช้ รวมทั้งประโยชน์ที่จะเกิดขึ้น จากการศึกษาอย่างละเอียด และมีความเข้าใจดีแล้ว

ผู้วิจัยรับรองว่าจะตอบคำถามต่างๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบังซ่อนเร้นจนข้าพเจ้าพอใจ ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมโครงการวิจัยนี้เมื่อใดก็ได้ และเข้าร่วมโครงการวิจัยนี้โดยสมัครใจ และการบอกเลิกการเข้าร่วมการวิจัยนี้จะไม่ผลต่อการรักษาโรคที่ข้าพเจ้าจะพึงได้รับต่อไป

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะที่เกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้เฉพาะในรูปที่สรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่างๆ ที่เกี่ยวข้อง กระทำได้เฉพาะกรณีจำเป็น ด้วยเหตุผลทางวิชาการเท่านั้น

ผู้วิจัยรับรองว่าหากเกิดอันตรายใดๆ จากการวิจัยดังกล่าว ข้าพเจ้าจะได้รับการรักษาพยาบาลโดยไม่คิดมูลค่าตามมาตรฐานวิชาชีพ

ผู้วิจัยรับรองว่าหากมีข้อมูลเพิ่มเติมที่ส่งผลกระทบต่อการศึกษาข้าพเจ้าจะได้รับการแจ้งให้ทราบโดยไม่ปิดบังซ่อนเร้น

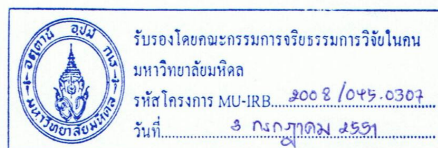
หากมีข้อสงสัยเกี่ยวกับขั้นตอนของการวิจัย หรือหากเกิดเหตุการณ์ที่ไม่พึงประสงค์จากการวิจัย ข้าพเจ้าจะสามารถติดต่อกับ ผู้วิจัย นางสาวอริสรา สุขวงษ์ณี ได้ที่บ้านเลขที่ 35 หมู่ที่ 5 ตำบลมหาพราหมณ์ อำเภอบางบาล จังหวัดพระนครศรีอยุธยา 13250 เบอร์โทรศัพท์ (035) 307-837 และ (089) 911-1400 ได้ทุกวันทั้งในและนอกเวลาราชการ

หากข้าพเจ้าได้รับการปฏิบัติไม่ตรงตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถติดต่อกับประธานคณะกรรมการจริยธรรมการวิจัยในคนหรือผู้แทน ได้ที่สำนักงานคณะกรรมการจริยธรรมการวิจัยในคน กองบริหารงานวิจัย สำนักงานอธิการบดีมหาวิทยาลัยมหิดล ตำบลศาลายา อำเภอพุทธมณฑล จังหวัดนครปฐม 73170 โทร. 02-849-6241-6, 02-849-6066 โทรสาร 02-849-6247

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้ว และมีความเข้าใจดีทุกประการ และได้ลงนามในใบยินยอมนี้ด้วยความเต็มใจ

ลงนาม.....ผู้เข้าร่วมการวิจัย วันที่.....

ลงนาม.....ผู้วิจัย/ผู้ให้ข้อมูล วันที่.....

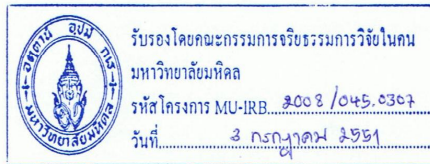


ในกรณีที่ผู้ยินยอมตนให้ทำการวิจัยไม่สามารถอ่านและเขียนหนังสือได้ จะต้องได้รับการยินยอมในขณะที่ยังมีสติสัมปชัญญะ และระบุข้อความไว้ตามนี้ ข้าพเจ้าไม่สามารถอ่านหนังสือได้ แต่ผู้วิจัยได้อ่านข้อความในใบยินยอมนี้ให้แก่ข้าพเจ้าฟังจนเข้าใจดีแล้ว ข้าพเจ้าจึงลงนามหรือประทับลายนิ้วมือของข้าพเจ้าในใบยินยอมนี้ด้วยความเต็มใจ

ลงนาม.....ผู้ยินยอม

ลงนาม.....พยาน

ลงนาม.....พยาน



**APPENDIX D**  
**THE QUESTION GUIDE FOR FOCUS GROUP DISCUSSION**  
**AT THE 1<sup>st</sup> MEETING**

1. How do you feel about your ability to manage your diabetes?  
ท่านรู้สึกอย่างไรต่อความสามารถของท่านในการดูแลรักษาโรคเบาหวาน?
2. How do you feel about your quality of life?  
ท่านรู้สึกอย่างไรต่อคุณภาพชีวิตของท่าน?
3. What are things that make you difficult for self-care?  
สิ่งใดที่ทำให้ท่านมีความลำบากในการดูแลตนเองเมื่อเป็นเบาหวาน?
4. Can you tell me a bit more about that? ช่วยเล่าเรื่องเรื่องนั้นหน่อยได้ไหม?
5. Why do you think it is a problem (or it happened)?  
ทำไมท่านจึงคิดว่าเป็นปัญหา?
6. Is there anything that would improve the situation?  
มีสิ่งใดที่จะช่วยให้สถานการณ์นั้นดีขึ้นบ้างไหม?
7. If not, why not? ถ้าไม่มีเลย เพราะอะไร?
8. Who has the power in this situation?  
ผู้ใดพอจะมีอำนาจได้บ้างสำหรับสถานการณ์แบบนี้?
9. Who has the power to make it better?  
ผู้ใดมีอำนาจพอที่จะช่วยให้สถานการณ์ดีขึ้นบ้าง?
10. Is there anything that you could do as a person?  
มีสิ่งใดที่ท่านในฐานะประชาชนคนหนึ่งพอจะทำได้บ้างไหม?
11. Is there anything that a group could do to improve the situation?  
มีสิ่งใดที่กลุ่มพอจะช่วยให้สถานการณ์นั้นดีขึ้นบ้างไหม?

**APPENDIX E**  
**THE QUESTION GUIDE FOR GENERAL FOCUS GROUP**  
**DISCUSSION AT THE END OF EVERY MEETING**

1. How do you think things went today?  
ท่านคิดอย่างไรต่อการเข้ากลุ่มครั้งนี้?
2. What was most helpful?  
สิ่งใดที่ท่านคิดว่าให้ประโยชน์สูงสุด?
3. Are there changes that we should make for the next meeting?  
สิ่งใดที่ควรมีการเปลี่ยนแปลงหรือปรับปรุงสำหรับการเข้ากลุ่มคราวหน้า?

**APPENDIX F**  
**THE QUESTION GUIDE FOR FOCUS GROUP DISCUSSION AT**  
**THE 2<sup>nd</sup> AND 4<sup>th</sup> MONTH OF MEETINGS**

1. How do you think things are going in these meetings?  
ท่านคิดอย่างไรต่อการเข้ากลุ่มที่ผ่านมา?
2. What have the best things been for you?  
สิ่งใดที่นับว่าเป็นสิ่งที่ดีที่สุดที่ท่านได้รับจากการเข้ากลุ่ม?
3. Are there things that have happened that are not good? If so, what are they?  
สิ่งใดที่ท่านคิดว่าไม่ดี?
4. What are the most important things that you have learned?  
ท่านได้เรียนรู้สิ่งใดจากการเข้ากลุ่ม?
5. Have you made any changes in how you manage your diabetes?  
หลังจากที่ท่านเข้ากลุ่ม ท่านมีการเปลี่ยนแปลงสิ่งใดหรือไม่ในการดูแลรักษาโรคเบาหวานของ  
ท่าน?
6. If yes, what has led to these changes?  
ถ้าท่านมีการเปลี่ยนแปลงเกี่ยวกับการดูแลรักษาโรคเบาหวานของท่านหลังจากที่ท่านเข้ากลุ่ม  
ท่านพอจะบอกได้ไหมว่าเพราะสาเหตุใดที่ทำให้ท่านเกิดการเปลี่ยนแปลงนั้นขึ้น?
7. We will review our plans for the next two months. What changes would you like to  
see in these plans?  
สิ่งใดที่ท่านคิดว่าควรจะเปลี่ยนหรือปรับปรุงสำหรับกิจกรรมกลุ่มคราวต่อไป?

**APPENDIX G**  
**THE QUESTION GUIDE FOR FOCUS GROUP DISCUSSION**  
**AT THE 6<sup>th</sup> MONTH OF MEETINGS**

1. Tell me what participating in the self-help group has been like for you?  
ท่านคิดอย่างไรต่อการเข้ากลุ่มช่วยเหลือตนเอง?
  
2. What have you learned and is most useful from participating in the self-help group?  
สิ่งใดที่ท่านคิดว่าให้ประโยชน์สูงสุดจากการเข้ากลุ่ม?
  - 2.1 What is like for you to have type 2 diabetes?  
ขณะนี้ท่านคิดอย่างไรเกี่ยวกับโรคเบาหวานของท่าน?
  
  - 2.2 Has anything changed about the way you manage your diabetes?  
มีสิ่งใดเปลี่ยนแปลงใหม่ในการดูแลรักษาโรคเบาหวานของท่าน?
  
3. What do you enjoy most about the self-help group?  
สิ่งใดที่ท่านรู้สึกเพลิดเพลินมากที่สุดในการเข้ากลุ่มช่วยเหลือตนเอง?
  
4. What do you like best about the self-help group?  
สิ่งใดที่ท่านชอบมากที่สุดในการเข้ากลุ่มช่วยเหลือตนเอง?
  
5. What would you suggest for the future?  
สิ่งใดที่ท่านต้องการจะแนะนำสำหรับการเข้ากลุ่มช่วยเหลือตนเอง?

## APPENDIX H

### THE OBSERVATION GUIDE

1. How about physical appearance of each member?  
รูปร่างลักษณะท่าทางของสมาชิกเป็นอย่างไร?
2. What is the atmosphere during group meetings?  
บรรยากาศขณะประชุมกลุ่มเป็นอย่างไร?
3. How about the relationships among the group members?  
สัมพันธภาพระหว่างสมาชิกภายในกลุ่มเป็นอย่างไร?
4. What are the themes of discussion about type 2 diabetes that emerge over time with the group? Are these topics that get raised repeatedly?  
อะไรคือประเด็นสำคัญเกี่ยวกับโรคเบาหวานที่พูดกันตลอดเวลาในการเข้าประชุมกลุ่มทุกครั้ง?
5. How do group members help one another?  
สมาชิกภายในกลุ่มมีการช่วยเหลือกันในลักษณะใด?
6. How a leadership emerging and/or shared?  
ลักษณะความเป็นผู้นำของหัวหน้ากลุ่มและสมาชิกกลุ่มคนอื่นเป็นอย่างไร?
7. How are decisions made? ลักษณะการตัดสินใจของกลุ่มเป็นอย่างไร?
8. How are differences resolved? การแก้ไขปัญหาคความขัดแย้งเป็นอย่างไร?
9. Who participates? Who doesn't participate actively in the group?  
ในการประชุมกลุ่มแต่ละครั้งมีผู้ใดเข้าร่วมประชุมและผู้ใดไม่เข้าร่วมประชุม? ผู้ใดมีความกระตือรือร้นในการแสดงความคิดเห็นขณะเข้าประชุมและผู้ใดไม่แสดงความคิดเห็นใดเลยขณะเข้าประชุม?
10. How active participation encouraged of is discouraged within the group?  
ผู้ที่มีความกระตือรือร้นได้มีการกระตุ้นสมาชิกคนอื่นที่ไม่ค่อยแสดงความคิดเห็นอย่างไร?

11. How about their emerged opinions, is it sounds positive or negative thinking?  
ลักษณะความคิดเห็นของสมาชิกแต่ละคนเป็นความคิดเชิงบวกหรือเชิงลบ?
12. Who stays in the group and who leaves?  
ผู้ใดเข้าร่วมประชุมกลุ่มจนกระทั่งสิ้นสุดการประชุมและผู้ใดลุกออกไปก่อนสิ้นสุดการประชุม?
13. How about the ability in reading and writing?  
ความสามารถในการอ่านและเขียนของสมาชิกเป็นอย่างไร?
14. Is there any complaint about there financial status or problems?  
สมาชิกได้พูดเกี่ยวกับสถานภาพทางการเงินของตนเองบ้างไหมและอย่างไร?
15. Who talks about their family's members and in what way?  
สมาชิกได้พูดถึงสมาชิกครอบครัวในทำนองไหน?
16. Are there any kind of speech and behavior reflecting the positive change of self-care ability among members?  
มีคำพูดหรือพฤติกรรมใดของสมาชิกที่แสดงให้เห็นถึงการเปลี่ยนแปลงที่ดีขึ้นเกี่ยวกับการดูแลตนเอง?
17. What does each member respond to the change of blood sugar levels and weight?  
สมาชิกได้แสดงปฏิกิริยาหรือคำพูดใดต่อหน้าหนักตัวและระดับน้ำตาลในเลือดที่เปลี่ยนแปลง?
18. What kinds of talking and performance reflecting any change in improved quality of life?  
มีคำพูดหรือการกระทำใดที่สะท้อนให้เห็นว่าสมาชิกมีคุณภาพชีวิตดีขึ้น?
19. Who else come to join the group and how about the manners of the participation?  
นอกจากสมาชิกกลุ่มแล้วยังมีใครอีกที่ต้องการมีส่วนร่วมกับกลุ่มด้วยและเป็นไปในลักษณะใด?
20. How about the atmosphere of providing healthcare service at the diabetic clinic including the relationships between the members and healthcare providers?  
บรรยากาศการให้บริการสุขภาพของคลินิกเบาหวานที่สถานีนอมนัยเป็นอย่างไร? ตลอดจนสัมพันธภาพระหว่างสมาชิกและเจ้าหน้าที่เป็นอย่างไร?

## APPENDIX I

### THE PERSONAL INFORMATION SHEET

**Please read each question and mark / for each question that gives the best for you.**

1. Gender

- Male             Female

2. Age

- 60 - 64 years       65 - 69 years       70 - 74 years       75 - 79 years  
 80 years and older

3. Religion

- Buddhism             Islam             Christianity

4. What is your educational level?

- No education             Primary level             Secondary level  
 Vocational level

5. What is your work status?

- Agriculture             Government employee             Private employee  
 Employer             Commerce             Own account worker  
 Household work

6. What is your average income per month?

- Less than 2,000 baht             2,000-4,000 baht             4,001 baht and over

7. How many family members living with you?

- You live alone       2 - 3 persons       4 - 5 persons       6 persons and over

8. What is your duration of diabetes?

- Less than 5 year       5 - 10 years       11 - 20 years       21 - 30 years  
 31 years and older

9. Where is the health service you mostly often used?

- Primary care unit             Community hospital             Provincial hospital

10. What kinds of transportation you often used to go to the health service?

- Drive by yourself
- Drive by your family members or neighbor
- Car services
- Walk

11. What kinds of your health service payment?

- Pensioner
- Health welfare
- Social security
- War veteran card
- Universal coverage card
- Pay by yourself
- Health insurance with insurance company

**APPENDIX J**  
**THE PERSONAL INFORMATION SHEET (THAI)**

**แบบสอบถามข้อมูลส่วนตัว**

โปรดอ่านคำถามแต่ละข้อและทำเครื่องหมาย / ใน  ที่ตรงกับความเป็นจริงของท่านมากที่สุด

1. เพศ

- ชาย                       หญิง

2. อายุ

- 60 - 64 ปี       65 - 69 ปี       70 - 74 ปี       75 - 79 ปี       80 ปีขึ้นไป

3. ศาสนา

- พุทธ                       อิสลาม                       คริสต์

4. ระดับการศึกษาของท่านคือ

- ไม่ได้เรียนหนังสือ       ประถมศึกษา       มัธยมศึกษา       อาชีวศึกษา

5. ท่านประกอบอาชีพอะไร?

- เพาะปลูก       ลูกจ้างรัฐบาล       ลูกจ้างเอกชน       นายจ้าง  
 ค้าขาย       ประกอบธุรกิจส่วนตัว       งานบ้าน

6. ท่านมีรายได้เฉลี่ยต่อเดือนเท่าไร?

- น้อยกว่า 2,000 บาท       2,000 – 4,000 บาท       4,001 บาทขึ้นไป

7. นอกจากตัวท่านแล้ว มีบุคคลอื่นอาศัยอยู่บ้านเดียวกับท่านกี่คน?

- ท่านอยู่คนเดียว       2 - 3 คน       4 - 5 คน       6 คนขึ้นไป

8. ท่านเป็นเบาหวานมานานเท่าใด?

- น้อยกว่า 5 ปี       5 - 10 ปี       11 - 20 ปี       21 - 30 ปี       31 ปีขึ้นไป

9. ท่านมักไปใช้บริการสถานพยาบาลที่ใด?

- สถานีอนามัย       โรงพยาบาลอำเภอ       โรงพยาบาลจังหวัด

10. ท่านเดินทางไปสถานพยาบาลนั้นโดยวิธีใด?

- ขับรถด้วยตัวเอง       ได้รับความช่วยเหลือจากบุคคลในครอบครัวหรือเพื่อนบ้าน  
 รถรับจ้าง       เดินไปเอง

11. ท่านจ่ายค่ารักษาพยาบาลโดยวิธีใด?

- สวัสดิการข้าราชการบำนาญ       สวัสดิการข้าราชการ       สวัสดิการประกันสังคม  
 บัตรทหารผ่านศึก       บัตรประกันสุขภาพ       ประกันสุขภาพกับบริษัทประกัน  
 ชำระเงินเอง

## APPENDIX K THE WHOQOL-BREF-THAI

### เครื่องชี้วัดคุณภาพชีวิตขององค์การอนามัยโลกชุดย่อ ฉบับภาษาไทย

**คำชี้แจง** ข้อคำถามต่อไปนี้จะถามถึงประสบการณ์อย่างใดอย่างหนึ่งของท่าน ในช่วง 2 สัปดาห์ที่ผ่านมา ให้ท่านสำรวจตัวท่านเอง และประเมินเหตุการณ์หรือความรู้สึกของท่าน แล้วทำเครื่องหมาย / ในช่องคำตอบที่เหมาะสมและเป็นจริงกับตัวท่านมากที่สุด โดยคำตอบมี 5 ตัวเลือกคือ

ไม่เลย	หมายถึง	ท่านไม่มีความรู้สึกเช่นนั้นเลย รู้สึกไม่พอใจมาก หรือรู้สึกแย่มาก
เล็กน้อย	หมายถึง	ท่านมีความรู้สึกเช่นนั้นนานๆครั้ง รู้สึกเช่นนั้นเล็กน้อย รู้สึกไม่พอใจหรือรู้สึกแย่น้อย
ปานกลาง	หมายถึง	ท่านมีความรู้สึกเช่นนั้นปานกลาง รู้สึกพอใจระดับกลางๆ หรือรู้สึกแย่น้อยระดับกลางๆ
มาก	หมายถึง	ท่านมีความรู้สึกเช่นนั้นบ่อยๆ รู้สึกพอใจหรือรู้สึกดี
มากที่สุด	หมายถึง	ท่านมีความรู้สึกเช่นนั้นเสมอ รู้สึกเช่นนั้นมากที่สุด หรือรู้สึกว่สมบูรณ์ รู้สึกพอใจมาก รู้สึกดีมาก

ข้อที่	ในช่วง 2 สัปดาห์ที่ผ่านมา	ไม่เลย	เล็กน้อย	ปานกลาง	มาก	มากที่สุด
1	ท่านพอใจกับสุขภาพของท่านในตอนนี้เพียงใด How satisfied are you with your health?					
2	การเจ็บปวดตามร่างกาย เช่นปวดหัว ปวดท้อง ปวดตามตัว ทำให้ท่านไม่สามารถทำในสิ่งที่ต้องการมากน้อยเพียงใด To what extent do you feel that physical pain prevents you from doing what you need to do?					

ข้อ ที่	ในช่วง 2 สัปดาห์ที่ผ่านมา	ไม่ เลย	เล็กน้อย	ปาน กลาง	มาก	มาก ที่สุด
3	ท่านมีกำลังเพียงพอที่จะทำสิ่งต่างๆในแต่ละวัน ใหม่ (ทั้งเรื่องงาน หรือการดำเนินชีวิต ประจำวัน) Do you have enough energy for everyday life?					
4	ท่านพอใจกับการนอนหลับของท่านมากน้อย เพียงใด How satisfied are you with your sleep?					
5	ท่านรู้สึกพึงพอใจในชีวิต (เช่น มีความสุข ความ สงบ มีความหวัง) มากน้อยเพียงใด How much do you enjoy life?					
6	ท่านมีสมาธิในการทำงานต่างๆดีเพียงใด How well are you able to concentrate?					
7	ท่านรู้สึกพอใจในตนเองมากน้อยแค่ไหน How satisfied are you with yourself?					
8	ท่านยอมรับรูปร่างหน้าตาของตัวเองได้ไหม Are you able to accept your bodily appearance?					
9	ท่านมีความรู้สึกไม่ดี เช่น รู้สึกเหงา เศร้า หดหู่ สิ้นหวัง วิตกกังวล บ่อยแค่ไหน How often do you have negative feelings such as blue mood, despair, anxiety, depression?					
10	ท่านรู้สึกพอใจมากน้อยแค่ไหนที่สามารถทำ อะไรๆผ่านไปได้ในแต่ละวัน How satisfied are you with your ability to perform your daily living activities?					
11	ท่านจำเป็นต้องไปรับการรักษาพยาบาลมากน้อย เพียงใดเพื่อที่จะทำงานหรือมีชีวิตอยู่ไปได้ในแต่ละ วัน How much do you need any medical treatment to function in your daily life?					

ข้อ ที่	ในช่วง 2 สัปดาห์ที่ผ่านมา	ไม่ เลย	เล็ก น้อย	ปาน กลาง	มาก	มาก ที่สุด
12	ท่านพอใจกับความสามารถในการทำงานได้ อย่างที่เคยทำมามากน้อยเพียงใด How satisfied are you with your capacity for work?					
13	ท่านพอใจต่อการผูกมิตรหรือเข้ากับคนอื่นอย่าง ที่ผ่านมาแค่ไหน How satisfied are you with your personal relationships?					
14	ท่านพอใจกับการช่วยเหลือที่เคยได้รับจาก เพื่อนๆแค่ไหน How satisfied are you with the support you get from your friends?					
15	ท่านรู้สึกว่าคุณชีวิตมีความมั่นคงปลอดภัยดีไหมใน แต่ละวัน How safe do you feel in your daily life?					
16	ท่านพอใจกับสภาพบ้านเรือนที่อยู่ตอนนี้มาก น้อยเพียงใด How satisfied are you with the conditions of your living place?					
17	ท่านมีเงินพอใช้จ่ายตามความจำเป็นมากน้อย เพียงใด Have you enough money to meet your needs?					
18	ท่านพอใจที่จะสามารถไปใช้บริการสาธารณสุข ได้ตามความจำเป็นเพียงใด How satisfied are you with your access to health services?					
19	ท่านได้รู้เรื่องราวข่าวสารที่จำเป็นในชีวิตแต่ละ วันมากน้อยเพียงใด How available to you is the information that you need in your day-to-day life?					

ข้อ ที่	ในช่วง 2 สัปดาห์ที่ผ่านมา	ไม่ เลย	เล็ก น้อย	ปาน กลาง	มาก	มาก ที่สุด
20	ท่านมีโอกาสได้พักผ่อนคลายเครียดมากน้อย เพียงใด To what extent do you have the opportunity for leisure activities?					
21	สภาพแวดล้อมดีต่อสุขภาพของท่านมากน้อย เพียงใด How healthy is your physical environment?					
22	ท่านพอใจกับการเดินทางไปไหนมาไหนของ ท่าน (หมายถึงการคมนาคม) มากน้อยเพียงใด How satisfied are you with your transport?					
23	ท่านรู้สึกว่าคุณชีวิตท่านมีความหมายมากน้อยแ่ ไหน To what extent do you feel your life to be meaningful?					
24	ท่านสามารถไปไหนมาไหนด้วยตนเองได้ดี เพียงใด How well are you able to get around?					
25	ท่านพอใจในชีวิตทางเพศของท่านแค่ไหน? (ชีวิตทางเพศ หมายถึง เมื่อเกิดความรู้สึกทางเพศ ขึ้นแล้วท่านมีวิธีการทำให้ผ่อนคลายลงได้ รวมถึง การช่วยเหลือตนเองหรือการมี เพศสัมพันธ์) How satisfied are you with your sex life?					
26	ท่านคิดว่าท่านมีคุณภาพชีวิต (ชีวิตความเป็นอยู่) อยู่ในระดับใด How would you rate your quality of life?					

## APPENDIX L THE DSES-THAI

### แบบวัดความสามารถดูแลตนเองสำหรับผู้ป่วยที่เป็นโรคเบาหวานชนิดที่ 2

แบบวัดนี้จะถามถึงระดับความมั่นใจในความสามารถดูแลตนเองเมื่อเป็นโรคเบาหวานชนิดที่ 2 **ไม่มี** คำตอบที่ถูกหรือคำตอบที่ผิด หลังอ่านข้อความกรุณาเขียนเครื่องหมายวงกลมล้อมรอบหมายเลขที่ตรงกับความรู้สึกของท่านมากที่สุด

1 = ไม่เห็นด้วยอย่างยิ่ง      2 = ไม่เห็นด้วยปานกลาง      3 = ไม่เห็นด้วยเล็กน้อย  
 4 = เห็นด้วยเล็กน้อย      5 = เห็นด้วยปานกลาง      6 = เห็นด้วยอย่างยิ่ง  
 เขียนเครื่องหมายวงกลมล้อมรอบ 0 ถ้าข้อความนั้นไม่ตรงกับความรู้สึกของท่านเลย

1	ฉันสามารถปฏิบัติตนในการดูแลตนเองสำหรับโรคเบาหวานได้ทุกอย่างในชีวิตประจำวัน I can carry out practically all of the self-care activities in my daily diabetes routine.	1	2	3	4	5	6	0
2	ฉันมั่นใจว่าฉันสามารถควบคุมโรคเบาหวานที่เป็นอยู่ได้ I am confident in my ability to manage my diabetes.	1	2	3	4	5	6	0
3	ฉันรู้สึกไม่มั่นใจในสิ่งที่ฉันทำอยู่ทุกวันในการดูแลตนเองเมื่อเป็นโรคเบาหวาน I feel unsure about having to use what I know about diabetes self-treatment every day.	1	2	3	4	5	6	0
4	ฉันคิดว่าฉันไม่สามารถปฏิบัติตนครบถ้วนตามแบบแผนการดูแลตนเองสำหรับโรคเบาหวานที่เป็นอยู่ได้ทุกวัน I don't think I can follow my diabetes routine every single day.	1	2	3	4	5	6	0
5	ฉันสามารถควบคุมการรับประทานอาหารสำหรับโรคเบาหวานได้เมื่อนฉันรับประทานอาหารในที่คุ้นเคยซึ่งไกลจากบ้าน (เช่นที่บ้านของเพื่อน) I can stay on my diabetic diet when I eat in familiar places away from home (such as a friend's house).	1	2	3	4	5	6	0

6	ฉันสามารถควบคุมการรับประทานอาหารสำหรับ โรคเบาหวานได้เมื่อฉันรับประทานอาหารในสถานที่ที่ไม่คุ้นเคย I can stay on my diabetic diet when I eat in unfamiliar places.	1	2	3	4	5	6	0
7	ฉันไม่แน่ใจว่าฉันจะสามารถควบคุมการรับประทานอาหาร สำหรับโรคเบาหวานได้ถ้าคนรอบข้างฉันไม่ทราบว่าฉันเป็น โรคเบาหวาน I'm not sure I'll be able to stay on my diabetic diet when the people around me don't know that I have diabetes.	1	2	3	4	5	6	0
8	ฉันไม่แน่ใจว่าฉันจะสามารถควบคุมการรับประทานอาหาร สำหรับโรคเบาหวานได้ทุกวัน I'm not sure I'll be able to follow my diabetic diet every day.	1	2	3	4	5	6	0
9	เมื่อฉันไปงานเลี้ยงฉันสามารถควบคุมการรับประทานอาหาร สำหรับโรคเบาหวานได้ When I go to parties, I can follow my diet plan.	1	2	3	4	5	6	0
10	ในหนึ่งสัปดาห์ฉันสามารถออกกำลังกายได้หลายครั้ง I can exercise several times a week.	1	2	3	4	5	6	0
11	ฉันไม่สามารถออกกำลังกายได้ถ้าฉันรู้สึกว่าจะไม่อยากจะออก กำลังกาย I can't exercise unless I feel like exercising.	1	2	3	4	5	6	0
12	ฉันทราบว่าเมื่อไรที่จำเป็นต้องปรึกษาแพทย์เมื่อมีปัญหาที่เท้า I can figure out when to call my doctor about problems with my feet.	1	2	3	4	5	6	0
13	ฉันสามารถประเมินตนเองได้เวลาที่ระดับน้ำตาลในเลือดของ ฉัน สูงกว่าปกติ I can recognize when my blood sugar is too high.	1	2	3	4	5	6	0
14	ฉันสามารถไปตรวจระดับน้ำตาลในเลือดได้บ่อยกว่าปกติที่ กำหนดเมื่อฉันรู้สึกว่าจะไม่สบาย When I feel sick, I can test my blood more than I routinely do.	1	2	3	4	5	6	0
15	ฉันสามารถทำตามคำแนะนำที่ได้รับในการป้องกันภาวะ น้ำตาลในเลือดต่ำ I can do what was recommended to prevent low blood sugar reactions.	1	2	3	4	5	6	0

16	ฉันสามารถเข้าใจวิธีการจัดการดูแลตนเองเมื่อระดับน้ำตาลในเลือดของฉันสูงกว่าปกติ I can figure out what self-treatment to administer when my blood sugar gets higher than it should be.	1	2	3	4	5	6	0
17	ฉันสามารถปรับแผนการดูแลตนเองสำหรับโรคเบาหวานให้เข้ากับชีวิตประจำวันของฉันได้ I can fit my diabetes self-treatment routine into my usual lifestyle.	1	2	3	4	5	6	0
18	ฉันคิดว่าฉันจะสามารถปฏิบัติตามแผนการดูแลตนเองสำหรับโรคเบาหวานได้แม้อกิจวัตรประจำวันของฉันจะเปลี่ยนแปลง I think I'll be able to follow my diabetes plan even when my daily routine changes.	1	2	3	4	5	6	0

**APPENDIX M**  
**PERMISSION LETTERS TO USE INSTRUMENTS**

Subject:	RE: need help for permission to use WHOQOL instrument
Date:	Mon, 5 Mar 2007 18:02:03 +0100
From:	"Poznyak, Vladimir B." <poznyakv@who.int>
To:	<a href="mailto:sukwatja@ualberta.ca">sukwatja@ualberta.ca</a>
CC:	"permissions" <permissions@who.int>

Dear Ms. Arissara Sukwatjane,

Thanks for your message and your interest in using WHO instruments, That can be freely reproduced and used, but not in conjunction with commercial purposes.

With best regards,  
Vladimir

-----Original Message-----

From: [sukwatja@ualberta.ca](mailto:sukwatja@ualberta.ca) [mailto:[sukwatja@ualberta.ca](mailto:sukwatja@ualberta.ca)]  
Sent: Saturday, March 03, 2007 12:40 AM  
To: Poznyak, Vladimir B.  
Cc: permissions  
Subject: need help for permission to use WHOQOL instrument

Dear Dr. Vladimir Poznyak,

I am a doctoral student in nursing program of Mahidol University, Thailand. Right now I am developing my dissertation proposal at University of Alberta, Canada. My research purpose is to improve the quality of life among Thai elders with diabetes in a rural community. I and my professor appreciate the WHOQOL instrument too much. Would you mind let me use the WHOQOL-BREF (Thai version) to measure the quality of life of my research participants. If my request is not the thing that disturbs you much, please send me your letter of permission and any suggestion of using. You can send me via e-mail attachment or post mail.


Sincerely,  
Ms. Arissara Sukwatjane

From:	"chawin sirinak" <sirinak@hotmail.com>
To:	sukwatja@ualberta.ca, <a href="mailto:asukwatjanee@yahoo.com">asukwatjanee@yahoo.com</a>
Subject:	WHOQOL document
Date:	Sun, 11 Mar 2007 02:03:54 +0000

Dear Ms Arissara

I have got your permission letter. I would like to inform you that the translation WHOQOL document in Thai version is the collaborating project between W.H.O and Health Department, B.M.A.. So if you want to use our document you should ask the permission from W.H.O. too. For me, it is o.k. to use it and about the permission from W.H.O. you can contact with Dr. Valadimyr, who is the project manager of our study at his e-mail address : [poznyakv@who.int](mailto:poznyakv@who.int) and [narcisot@who.int](mailto:narcisot@who.int)

With best regards.  
Dr.Chawin sirinak

Subject:	 RE: permission to use the instrument
Date:	Wed, 28 Feb 2007 08:28:07 +0900
From:	"Pat Rapley" <P.Rapley@email.curtin.edu.au>
To:	"Arissara sukwatjanee" <asukwatjanee@yahoo.com>

Greetings Arissara - I am happy for you to use the DSES instrument. The scoring only requires that you reverse score the negatively worded items or the positively worded items depending on what you want high DSES scores to equal, i.e. lower scores = less, or, higher scores = more confidence / self-efficacy? The last column of zero for not applicable can be deleted.

I am happy to answer other questions & good luck. Cheers, pat

-----Original Message-----

From: Arissara sukwatjanee [<mailto:asukwatjanee@yahoo.com>]  
Sent: Tuesday, 27 February 2007 2:06 AM  
To: Pat Rapley

Subject: permission to use the instrument

Dear Dr. Rapley,

I am a doctoral student in nursing program of Mahidol University, Thailand. Right now I am developing my dissertation proposal at University of Alberta, Canada. My research purpose is to promote self-care agency among Thai elders with diabetes in a rural community. I and my professor appreciate the way you had developed your 18-item Diabetes Self-efficacy Scale too much. Would you mind let me use your instrument to measure the self-efficacy of my research participants. If my request is not the thing that disturbs you much, please send me your instrument and any suggestion of using, such as how to use rating scale. You can send me via e-mail attachment or post mail.

PS Please tell me if I have to pay for the delivery expense and the fee of using the instrument.

Sincerely,

Ms. Arissara Sukwatjane

Subject: RE: permission to use the instrument  
Date: Fri, 11 Apr 2008 10:25:29 +0800  
From: "Pat Rapley" <P.Rapley@email.curtin.edu.au>  
To: "Arissara sukwatjane" <asukwatjane@yahoo.com>

Arissara - Thank you for asking and feel free to translate it. I would be interested in your results if you could keep me informed.

Cheers,

pat

-----Original Message-----

From: Arissara sukwatjane [mailto:asukwatjane@yahoo.com]  
Sent: Tuesday, 8 April 2008 11:31 AM  
To: Pat Rapley  
Subject: RE: permission to use the instrument

Dear Dr. Rapley,

Thank you very much for your permission to use the DSES. Would you mind if I translate it into Thai by maintaining the equivalent meaning?

Best regards,

Arissara

**APPENDIX N**  
**LISTS OF EXPERTS WHO BACK-TRANSLATED AND**  
**EXAMINED THE CONTENT VALIDITY OF THE DSES-THAI**

**The expert who back-translated the DSES-THAI**

Lecturer Dr. Supinda Ruangjiratain

Department of Community Health Nursing, Faculty of Nursing, Mahidol  
University, Bangkok, Thailand

Special area: Community health nursing, HIV, women health, breast feeding

**The expert who examined the equivalent meaning of the back-translate the  
DSES-THAI**

Mr. Peter Hall

English Language Center, Mahidol University, Bangkok, Thailand

Special area: English native speaker and Linguistics

**The experts who examined the content validity of the DSES-THAI**

1. Associate Professor Pornsri Sriussadaporn

Department of Maternal and child Nursing, Faculty of Nursing, Mahidol  
University, Bangkok, Thailand

Special area: Diabetic Children and family, health promotion in children and  
adolescents with chronic illness

2. Assistant Professor Dr. Tassanee Prasopkittikun

Department of Maternal and child Nursing, Faculty of Nursing, Mahidol  
University, Bangkok, Thailand

Special area: Parenting and child development, self-efficacy, tool  
Development

3. Assistant Professor Dr. Wilaipun Somboontanont

Department of Community Health Nursing, Faculty of Nursing, Mahidol

University, Bangkok, Thailand

Special area: Community health nursing, gerontological health nursing, dementia care, primary care, family health nursing, observational method

4. Colonel Yupin Benjasuratwong

Diabetic Physician Specialist at Endocrine Unit, Phramongkutklao Hospital, Bangkok, Thailand

Special area: Diabetic care specialist

5. Ms. Uranee Ruttanapituk

Diabetic Nurse Specialist at Diabetic Center, Siriraj Hospital, Bangkok, Thailand

Special area: Diabetic care specialist

**APPENDIX O**  
**STATISTICAL OUT PUT OF THE STUDY**

**Fasting Blood Sugar for 6 Months of Self-help Group Participation among Participants**

<i>No.</i>	<i>Fbs 1<sup>st</sup> month</i>	<i>Fbs 2<sup>nd</sup> month</i>	<i>Fbs 3<sup>rd</sup> month</i>	<i>Fbs 4<sup>th</sup> month</i>	<i>Fbs 5<sup>th</sup> month</i>	<i>Fbs 6<sup>th</sup> month</i>
1	253	192	230	180	150	170
2	203	198	182	170	123	93
3	104	104	111	102	119	101
4	180	127	132	87	145	143
5	118	128	81	139	94	116
6	209	207	125	150	150	135
7	86	132	82	109	162	90
8	169	95	283	173	152	159
9	160	301	189	228	125	154
10	101	104	95	111	123	104
11	126	146	130	128	144	116
12	104	111	102	117	124	89
13	70	90	82	97	101	75
14	120	132	144	158	121	120
15	129	155	178	185	173	127
16	173	165	155	140	162	151
17	184	210	164	170	165	180
18	150	202	214	177	139	129
19	221	175	149	241	147	122
20	176	199	176	181	267	176

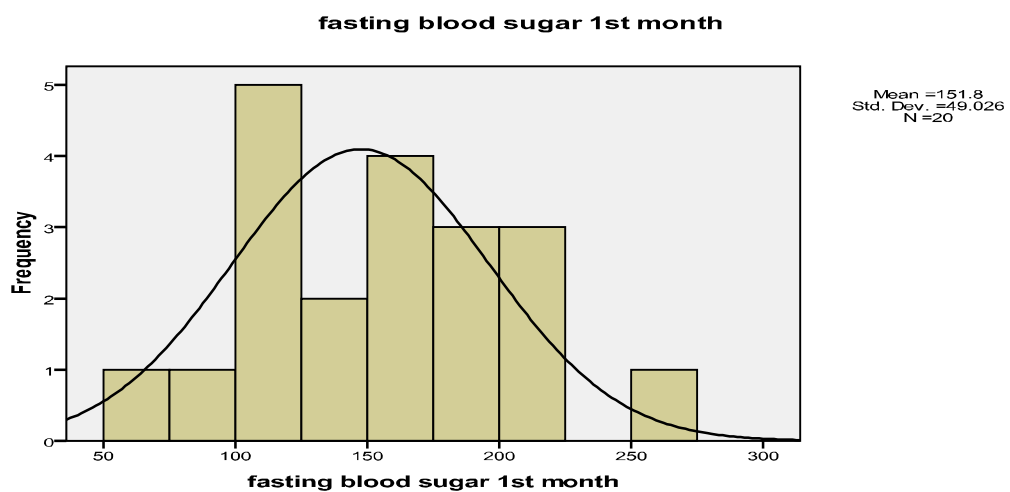
**Test Normal Distribution for Fasting Blood Sugar Scores at the 1<sup>st</sup> and 6<sup>th</sup> Month of Self-help Group Participation**

		fasting blood suga 1st month	fasting blood sugar 6th month
N		20	20
Normal Parameters <sup>a,b</sup>	Mean	151.80	127.50
	Std. Deviation	49.026	30.695
Most Extreme Differences	Absolute	.129	.081
	Positive	.129	.081
	Negative	-.087	-.078
Kolmogorov-Smirnov Z		.577	.360
Asymp. Sig. (2-tailed)		.893	.999

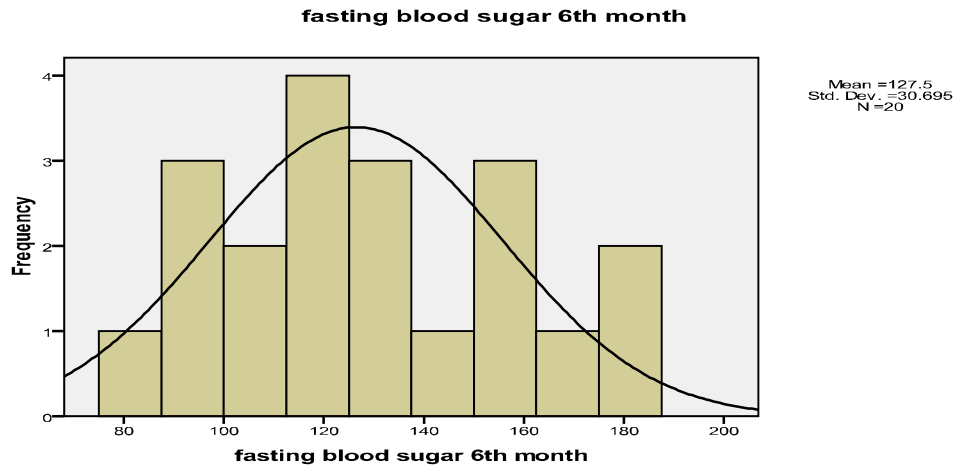
a. Test distribution is Normal.

b. Calculated from data.

**Histogram of Fasting Blood Sugar Scores at the 1<sup>st</sup> Month of Self-help Group Participation**



### Histogram of Fasting Blood Sugar Scores at the 6<sup>th</sup> Month of Self-help Group Participation



### Test Normal Distribution for Self-efficacy Scores at the 1<sup>st</sup> and 6<sup>th</sup> Month of Self-help Group Participation

One-Sample Kolmogorov-Smirnov Test

		self-efficacy before	self-efficacy after
N		20	20
Normal Parameters <sup>a,b</sup>	Mean	60.20	87.40
	Std. Deviation	18.752	13.531
Most Extreme Differences	Absolute	.167	.201
	Positive	.126	.146
Kolmogorov-Smirnov Z		.747	.898
Asymp. Sig. (2-tailed)		.632	.395

a. Test distribution is Normal.

Calculated from data.

### Histogram of Self-efficacy Scores at the 1<sup>st</sup> Month of Self-help Group

#### Participation



### Histogram of Self-efficacy Scores at the 6<sup>th</sup> Month of Self-help Group

#### Participation



### Test Normal Distribution for Quality of life Scores at the 1<sup>st</sup> and 6<sup>th</sup> Month of Self-help Group Participation

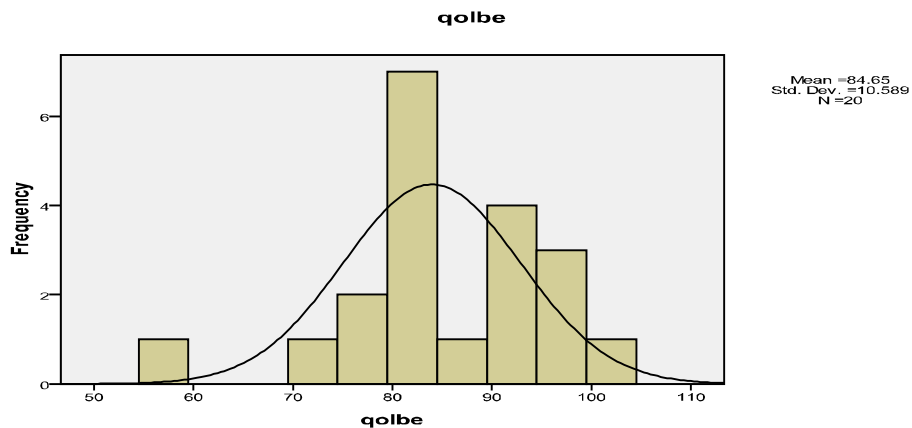
One-Sample Kolmogorov-Smirnov Test

		qolbe	qolaf
N		20	20
Normal Parameters <sup>a, b</sup>	Mean	84.65	93.40
	Std. Deviation	10.589	11.339
Most Extreme Differences	Absolute	.130	.109
	Positive	.074	.109
	Negative	-.130	-.076
Kolmogorov-Smirnov Z		.583	.489
Asymp. Sig. (2-tailed)		.886	.971

a. Test distribution is Normal.

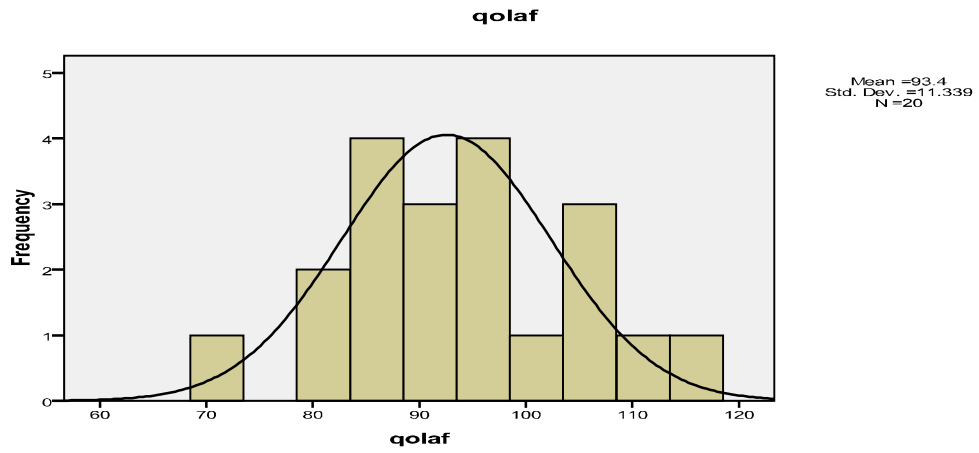
b. Calculated from data.

### Histogram of Quality of life Scores at the 1<sup>st</sup> Month of Self-help Group Participation



### Histogram of Quality of life Scores at the 6<sup>th</sup> Month of Self-help Group

#### Participation



## BIOGRAPHY

<b>NAME</b>	Miss Arissara Sukwatjane
<b>DATE OF BIRTH</b>	November 15, 1962
<b>PLACE OF BIRTH</b>	Ayutthaya, Thailand
<b>INSTITUTIONS ATTENDED</b>	Chonburi Nursing College, 1985: Diploma in Nursing & Midwifery Mahidol University, 2001: Master of Nursing Science (Adult) Bangkok University, 2004: Doctor of Philosophy (Interpersonal Communication) Mahidol University, 2009: Doctor of Philosophy (Nursing)
<b>SCHOLARSHIP</b>	The Commission on Higher Education, Ministry of Education
<b>RESEARCH GRANT</b>	Supported in part by the Thesis Grant, Faculty of Graduate Studies, Mahidol University Thailand Nursing and Midwifery Council
<b>POSITION &amp; OFFICE</b>	Lecturer, Faculty of Nursing, Srinakharinwirot University, 63 Moo 7, Ongkharuk, Nakhonnayok 26120, Thailand Tel: 662-6641000 Ext. 1800, 1816
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