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FACTORS AFFECTING THE DEMAND FOR FORMAL LONG-TERM CARE OF ELDERLY: A CASE STUDY IN THE MUNICIPALITY OF MUANG DISTRICT, PATHUM THANI PROVINCE

Mrs. Chathaya Wongrathanandha

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ที่มา: ผู้สูงอายุมีความจำเป็นต้องได้รับการดูแลระยะยาวเนื่องจากปัญหาสุขภาพที่มากขึ้นตามวัย
จังหวัดปทุมธานีมีจำนวนผู้สูงอายุเพิ่มขึ้นแต่ยังขาดข้อมูลของการศึกษาเกี่ยวกับการดูแลระยะยาวอย่าง
เป็นทางการสำหรับผู้สูงอายุ วัตถุประสงค์: เพื่อศึกษาความต้องการการดูแลระยะยาวอย่างเป็นทางการ
ของผู้สูงอายุและปัจจัยที่มีผลต่อความต้องการดังกล่าว วิธีการศึกษา: สัมภาษณ์กลุ่มตัวอย่างผู้สูงอายุ 85
รายซึ่งสุ่มจากเขตเทศบาลเมืองปทุมธานี ด้วยแบบสอบถามข้อมูลทั่วไป สุขภาพ และสถานการณ์จำลอง
ด้านราคาของบริการประเภทต่างๆ จากนั้นวิเคราะห์ความสัมพันธ์ระหว่างตัวแปรตามและตัวแปรอิสระ
ด้วยสมการถดถอยโลจิสติกแบบวัดผลซ้ำ ผลการศึกษา: ผู้สูงอายุที่ต้องพึ่งพิงส่วนใหญ่ได้รับการดูแล
ระยะยาวอย่างไม่เป็นทางการจากครอบครัว มีเพียง 1 รายที่ใช้บริการจ้างผู้ดูแลมาที่บ้าน ในกลุ่มผู้สูงอายุ
ซึ่งยังไม่ต้องพึ่งพิง ผู้ที่มีความต้องการจ้างผู้ดูแลมาที่บ้านมีจำนวนมากกว่าผู้ที่เลือกไปอยู่บ้านพักคนชรา
แม้ว่า ส่วนใหญ่จะรู้จักบ้านพักคนชรามากกว่า ความน่าจะเป็นของการใช้บริการดูแลที่บ้านเต็มเวลา
เฉพาะกลางวัน และ บ้านพักคนชรา คือ ร้อยละ 6.4, 0.3 และ 0.3 ตามลำดับ รายได้ที่มากขึ้นเพิ่มโอกาส
การใช้บริการ และราคาที่สูงขึ้นของบริการทำให้โอกาสลดลง ดังเช่นสินค้าและบริการทั่วไป
ความจำเป็นด้านสุขภาพเป็นปัจจัยที่ทำให้แนวโน้มการใช้บริการดูแลผู้สูงอายุอย่างเป็นทางการเพิ่มขึ้น
ยกเว้นบริการบ้านพักคนชรา ปัจจัยอื่นๆมีความแตกต่างกันเล็กน้อยในการดูแลอย่างเป็นทางการทั้ง 3
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สาขาวิชา   เศรษฐศาสตร์สาธารณสุข   ลายมือชื่อนิสิต _____

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KEYWORDS: AGED/ FEMALE/ FORMAL LONG-TERM CARE/ HEALTH SERVICE NEED AND DEMAND/ HOME CAREGIVER/ HUMANS/ MALE/ RESIDENTIAL HOME/ RISK FACTORS/ PATHUMTHANI/ SCENARIO-BASED INTERVIEW/ SOCIOECONOMIC FACTORS

CHATHAYA WONGRATHANANDHA: FACTORS AFFECTING THE DEMAND FOR FORMAL LONG-TERM CARE OF ELDERLY: A CASE STUDY IN THE MUNICIPALITY OF MUANG DISTRICT, PATHUM THANI PROVINCE. ADVISOR: ASSOC. PROF. WORAWET SUWANRADA, Ph.D., 94 pp.

Background: Older people need long-term care due to increasing health problems. Pathum Thani Province had rising numbers of elderly; however, there was no study about formal long-term care for elderly. Objectives: To study the demand for formal long-term care of elderly and factors affecting it. Methods: Interviewed 85 elderly sampled from the Municipality of Muang District, Pathum Thani Province with questionnaires consisted of general and health data, and price scenario of different types of care. The relationship between dependent and independent variables were analyzed by repeated measure binary logistic regression. Results: Dependent elderly relied on informal long-term care. Only 1 elderly used formal home caregiver service. More of the independent elderly demanded to hire home caregiver than those who would use residential home service, even though the latter was better known. Probability of utilization of full-time, daytime home care and residential home service were 6.4, 0.3 and 0.3 percent accordingly. Higher income increased the odds of demand and higher service price decreased them like normal goods and services. Need factors increased the likelihood of using formal care, except for residential home. Other factors affecting the demand were slightly different among the three types.

Field of Study: __Health Economics__ Student's Signature _____

Academic Year: _2011_____ Advisor's Signature _____

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CHAPTER I
INTRODUCTION

This chapter illustrates the overview of the thesis named "Factors Affecting the Demand for Formal Long-Term Care Of Elderly: A Case Study In The Municipality Of Muang District, Pathum Thani Province" which is submitted in partial fulfillment of the requirement for the degree of Master of Science Program in Health Economics, Faculty of Economics, Chulalongkorn University in academic year 2011.

1.1 Introduction

By the definition of the United Nations, any country that has elderly populations (aged 60 years and over) more than 10 percent is called "aging society". In 2006, Thailand elderly people are 10.7 percent of total population or 6.5 million out of 61.4 million. It shows that Thailand is facing the aging society, and the country; therefore, has to prepare its readiness, either the economic, social or elderly health care-giving arena to cope with such phenomenon.

Elderly people would unavoidably need long-term care due to dependency that results from the degenerative changes or underlying diseases. The need, in the health care fields, is usually equated with ability to benefit from treatment. On this approach, a person could be regarded as in need of long-term care if he or she has difficulties with personal or domestic care and would benefit from assistance. In Thailand, from the report of Thai elderly survey, only included those living at home, (The Survey of the Older Persons 2007, National Statistical Office; NSO) 841,963 persons out of 7.0 million, or 12.0 percent, reported difficulties in performing activities of daily living and want a caregiver or, in other words, they are dependent elderly. Similarly, 2007 Disability Survey (NSO) results have shown that 1.0 million out of 7.0 million elderly or 15.3 percent have disabilities and among them 722,871 or 67.9 percent their disabilities result from old age. Demand is the person's ability and willingness to purchase goods or services; therefore, demand for long-term care would arise if the person actually sought long-term care and was willing to pay, if required.

The long-term care can be divided into two major types: formal care by institutions or health care providers and informal care by family and friends. The former involves

costs depending on whether it is public-funded, partial public-funded or private-funded. The latter generally involves no financial cost to care recipient, though involves opportunity cost of the caregivers. The World Health Organization states that informal care is the major type of care of disabled persons all over the world, and most of the caregivers are females (Wiener, 2003). For the formal care, it can be categorized into nursing home care, residential home care and home care by paid workers. There are differences in nature of the services and the elderly who receive different type of formal care. It means that the demands for different types of care need to be considered as separate subsets of overall demand for long-term care.

Among elderly who reported dependent (The Survey of the Older Persons 2007, NSO), 87.6 percent has received informal care from family members or friends, 3.4 percent has received formal home care from health or non-health workers, and 9.0 percent reported no caregiver. Female members are almost 80 percent of all informal caregivers in Thai families (Yodpet, 2006). Nevertheless, females who perform unpaid works for families decreased from 44.3 percent in 1996 to 31.4 in 2004 (Work Role of Thai Women 2005, NSO); therefore, it is necessary for the government to prepare for elderly who lacked informal care. From a study of more than 400 older persons who live in long-term care institutions, most elderly, or 62.3 percent, made the decision to be institutionalized on their own and the most common reason of doing so is "no informal caregivers", 62.8 percent (Sasut, 2009). There are limited data and information about the demand for long-term care of Thai elderly.

Pathum Thani Province is one of the provinces in the vicinity of Bangkok. The population density is increasing rapidly due to the internal migration to the capital city and surrounding area. From 2005 to 2007, total population increased from 805,654 to 885,590 or 9.9 percent (Population statistics, 2005 - 2007). The elderly population, which was account for 8.1 percent of total population in 2007, increased 12.6 percent, while the working population increased 10.7 percent and the aged dependency ratio in 2005 and 2007 are 11.4 and 11.6 accordingly. In the Municipality of Muang District, the central part of Pathum Thani Province, the elderly population was 9.3 percent of total population in 2007. Total population increased from 17,727 to 18,221 (2.8 percent), from 2005 to 2007 and the aged dependency ratio, which was quite large compare to the provincial statistics, increased from 14.6 to 15.4. Among subgroups, numbers of elderly increased by 8.4 percent, while the working population increased only 3.0 percent. At present, there is no

organized home-based and community-based intervention for long-term care of elderly in Pathum Thani Province; therefore, this is an urgent issue to be considered.

The main objective of this study is to identify the demand for long-term care of elderly who live in the Municipality of Muang District, to be a case study for the future research at provincial level, and to be the baseline information for policy implication about local public long-term care provision to the elderly in the Municipality of Muang District.

1.2 Research Questions

1.2.1 Primary Questions

How much is the demand for formal long-term care of elderly who live in the Municipality of Muang District, Pathum Thani Province?

1.2.2 Secondary Questions

What factors can determine the demand for formal long-term care of elderly who live in the Municipality of Muang District, Pathum Thani Province?

1.3 Research Objectives

1.3.1 General Objectives

To identify the demand and its determinants for different types of formal long-term care, which are permanent nursing home, permanent residential home care, institutional day care and paid home care, in general Thai elderly; including independent, dependent and disabled, living in the Municipality of Muang District, Pathum Thani Province, using questionnaire survey.

1.3.2 Specific Objectives

1.3.2.1   To identify the demand for long-term care of general Thai elderly who live in the Municipality of Muang District, Pathum Thani Province. The types of long-term care include permanent nursing home care, permanent residential home care, institutional day care and home care by paid workers.

1.3.2.2   To identify the factors that determine the demand for long-term care of general Thai elderly who live in the Municipality of Muang District, Pathum Thani Province, including:

1.3.2.2.1   Predisposing factors

1.3.2.2.1.1 Demographic factors: age, sex, marital status

1.3.2.2.1.2 Social structure: education, family size

1.3.2.2.1.3 Psychological status: depression, cognition,

1.3.2.2.2   Enabling factors: income, price of long-term care services, home ownership, living arrangement,

1.3.2.2.3 Need factors

1.3.2.2.3.1 General: functional disability, frequent physician visits (more than 5 times per year), hospitalization,

1.3.2.2.3.2 Specific: Stroke, Alzheimer's disease or dementia, musculoskeletal disorders, mental disorders, cancers and diabetes mellitus.

1.4 Scope of the Study

Elderly people in this study include Thai elderly who live in the Municipality of Muang District, Pathum Thani Province and registered in the population census. The population census data is from the Municipality of Muang District Health Service Center.

Formal long-term care in this study includes permanent nursing home care, residential home care, institutional day care and home care by paid worker. Informal care is considered separately as another type of care.

Factors determining the demand for long-term care considered in this study are individual determinants, not societal determinants. Functional disability, which is one of the need factors, was basic activity of daily living and physical limitations, not included higher administrative functions.

1.5 Hypotheses

The demand for long-term care of elderly is determined by these following factors with expected signs in the parenthesis:

1.5.1   Predisposing factors

1.5.1.1   Demographic factors: age (+), sex (-), marital status (- for single)

1.5.1.2   Social structure: education (-), family size (-)

1.5.1.3   Psychological status: depression (-), cognition (+)

1.5.2   Enabling factors

    1.5.2.1   Income (+)

    1.5.2.2   Living arrangement (- for more children living together)

    1.5.2.3   Home ownership (+)

    1.5.2.4   Price of long-term care service (-)

1.5.3   Need factors

    1.5.3.1   General: functional disability (- for high ADL score, + for physical limitations), frequent physician visits (more than 5 times per year) (+), hospitalization (+)

    1.5.3.2   Specific: Underlying diseases (+) (for Stroke, Alzheimer's disease or dementia, musculoskeletal disorders excluded arthritis, mental disorders, cancers, and diabetes mellitus)

1.6 Possible Benefits

The demand of long-term care for elderly people and the determinants can be identified and used for policy implication concerning public long-term care provision by local government of the Municipality of Muang District, Pathum Thani Province. This study can provide preliminary results for further study at the provincial level.

CHAPTER II
LITERATURE REVIEW

The purpose of this study is to identify the demand for formal long-term care of elderly in a municipality in Thailand and factors that can determine it. This chapter provides more in-depth theoretical background about long-term care for elderly. The review included related definitions and studies about demand and its determinants. In addition, the next part provides evidences about long-term care in Thai context. The conceptual framework of this thesis is concluded at the end.

2.1. Definition of Long-Term Care

Long-term care service refers to the organization and delivery of a broad range of services and assistance to people who are limited in their ability to function independently on a daily basis over an extended period of time. There are two complementary components of this definition: the care continues over a long time period, and second the care is usually provided as an integrated program across service components. The services may be provided in a variety of settings including institutional, residential or home care (Health Division, 2008).

There are various services which are designed to minimize, rehabilitate, or compensate for loss of independent physical or mental functioning (Stone, 2000). The services include:

a. Assistance with basic activities of daily living (ADLs), such as bathing, dressing, eating, or other personal care.

b. Assistance with instrumental activities of daily living (IADLs), including household chores like meal preparation and cleaning.

c. Life management such as shopping, money management and medication management.

d. Transportation

e. Hands-on and stand-by or supervisory human assistance

f. Assistive devices: canes and walkers.

g. Assistive technology: emergency alert system and computerized medication reminders.

h. Home modification: ramps and the installation of grab bars and door handles.

In this study, only the assistance of basic activities of daily living (ADL) was emphasized because it is most important and should be the first thing to considered.

Long-term care definitions from studies in Thailand are similar to those in western countries. Long-term care in Thailand is widely defined as an arrangement of services, both formal and informal, to compensate for basic needs and help disabled persons maintain their health, social role and living in their best possible conditions (Yodpet, 2006). It is a continuous and interrelated care between family, institution and community.

2.1.1. Definition of Informal Care

Informal care refers to unpaid long-term care for elderly by relatives and friends, which is the dominant form of care throughout the world, including in developed countries (Wiener, 2003). Even though it involves no financial costs to care recipients, it usually involves opportunity costs and considerable burden to the caregivers.

2.1.2. Definition of Formal Care

Formal care refers to paid long-term care for elderly by health care providers or trained workers (Stone, 2000). The service involves costs depending on whether it is public-funded, partial public-funded or private-funded.

2.1.3. Definition of Nursing Home

Nursing home is defined as an institution providing full-time nursing care, assistance with activities of daily living and mobility, psychosocial and personal care, paramedical care, such as physiotherapy and occupational therapy (Ribbe et al., 1997). However, availability of these different types of care may vary from facility to facility and from country to country. Nursing homes mainly serve frail elders with chronic diseases, disabilities, either physical or mental or both. These facilities usually provide care, which can be characterized as the highest level of care.

2.1.4. Definition of Residential Home

Residential home for elderly people is an institution providing living conditions adjusted to the needs of residents usually requiring no more nursing care than can be given by a visiting nurse (Ribbe et al., 1997). In general, admission results from an inability to manage at home because of difficulties with activities of daily living and

instrumental activities of daily living. In some homes, assistance can be provided for some basic activities of daily living, including assistance with dressing, assistance with mobility from a private room to a communal room for meals and limited assistance with appliances such as urinary catheters. Usually, most care in residential homes is provided by nursing aides and personnel with little or no training. In many countries, residential homes are building complexes (apartment buildings) where elders reside in private apartments or single rooms.

2.1.5. Definition of Home Care Agency

Home care agency is a private firm, which sends home caregivers to places defined by customers to give care full-time, daytime or nighttime (Suwanrada, Chalermwong, Damjuti, Kamruengrit and Boonma, 2010). Home caregivers are capable of assisting basic activities of daily living for elders with little or no limitation in function. Some personnel are trained to care elderly with catheters.

2.2. Demand for Long-Term Care

In previous researches, demand for long-term care was studied in two ways: actual utilization and scenario-based interview. For actual utilization, there are many studies about utilization of nursing home care (Reschovsky, 1998), residential home care (van Bilsen, Hamers, Groot and Spreeuwenberg, 2006), home care (van Campen and Woittiez, 2003) and across the continuum of all types (Borrayo, Salmon, Polivka and Dunlop, 2002). However, in this study the scenario-based interview would be used because of the limited supply of long-term care services for elderly in the study site at present.

For researches with scenario-based interview, the methods of analysis, which were commonly used, were Cox proportional hazards regression model (Martikainen et al., 2009; Tomiak, Berthelot, Guimond and Mustard, 2000; Waidmann and Thomas, 2003), logistic regression (Goodlin, Boult, Bubolz and Chiang, 2004; Wolinsky, Callahan, Fitzgerald and Johnson, 1992), Contingent Value Method (CVM) (Costa-Font and Rovira-Forns, 2008) and Conjoint Analysis (Brau and Lippi Bruni, 2008; Ryan and Farrar, 2000).

2.3. Factors Determining the Demand for Long-Term Care

In researches about demand for health care or health service utilization, the Behavioral Model (Andersen and Newman, 1973) as shown in figure 2.1, was widely used as a conceptual framework for the determinants or factors that determine the behavior of each individual. This framework was also applicable for long-term care of older individual (Wolinsky, 1994; Wolinsky and Johnson, 1991). However, there are 3 factors suggested to be added into the model (Andersen, 1995): genetic factor, psychological characteristic and social relationship.

Recent studies using this conceptual framework still had consistent results with older studies. In a study of factors associated with nursing home entry (Tomiak et al., 2000), the dependent variable used was hazard of nursing home entry (survival time) and significant independent variables were as the followings:
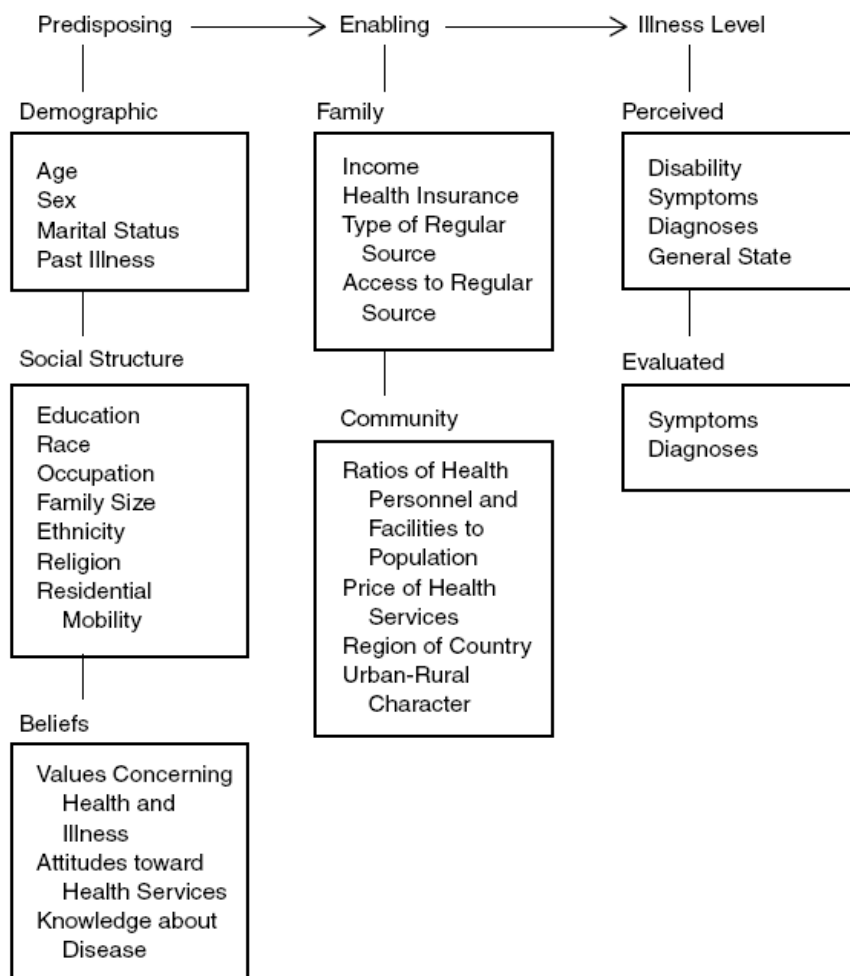
Figure 2.1 Illustration of the Behavioral Model, Individual Determinants of Health Service Utilization (R. Andersen & Newman, 1973; R. M. Andersen, 1995)

i. Predisposing factors (the risk of the individual to use services): age, marital status, education

ii. Enabling factors (the individual's ability to secure services): home ownership, living in urban area, supply for nursing home beds, numbers of physicians, income, social support provided by families and friends

iii. Need factors (the individual's illness level):

a. Specific: Alzheimer's disease or dementia, musculoskeletal disorders, stroke, other mental disorders

b. General: functional disability, frequent physician visits (>5 times/year), hospitalization

Another study was about the demand of elderly people for residential care: an exploratory study (van Bilsen et al., 2006). The dependent variable was refusal or acceptance of an admission offer to a home registered and the significant independent variables are social network and level of physical limitation. This study had fewer significant variables due to the smaller size of sample, 67 elderly persons.

Finally, there was a study in Finland about chronic conditions and the risk of long-term institutionalization among older people (Nihtila et al., 2008). The chronic conditions that were strongly associated with the risk of institutionalization independently of socio-demographic confounders and the presence of other chronic conditions, are dementia, Parkinson's disease, stroke, depressive symptoms, other mental health problems, hip fracture and diabetes mellitus.

2.3.1. Predisposing Factors
2.3.1.1. Age

Several studies had congruent results that older age was the strongest predictor of the need for long-term care (Gaugler, Duval, Anderson and Kane, 2007; Goodlin et al., 2004; Martikainen et al., 2009; Tomiak et al., 2000; Waidmann and Thomas, 2003; Wolinsky et al., 1992). However, the study, which used Contingent Value Method, found that older persons were less likely to purchase long-term care insurance than middle-aged (Costa-Font and Rovira-Forns, 2008).

2.3.1.2. Sex

Men had higher risk of nursing home and assisted living admission due to higher risk of cardiovascular diseases and deteriorating health (Gaugler et al., 2007; Luppa, Luck, Weyerer, Konig and Riedel-Heller, 2009; Martikainen et al., 2009; Waidmann and Thomas, 2003) but one study reported that sex was insignificant factor (Wolinsky et al., 1992).

2.3.1.3. Marital Status

There were controversial evidences regarding marital status and long-term care utilization. Some studies, including the meta-analysis, found that unmarried elderly had a greater risk of placement in long-term care facilities (Gaugler et al., 2007; Waidmann and Thomas, 2003). Nevertheless, another study reported significance only for men (Tomiak et al., 2000) and another study did not find any significance at all (Goodlin et al., 2004).

2.3.1.4. Education

Most articles reported no significant relationship between education and use of long-term care (Gaugler et al., 2007; Waidmann and Thomas, 2003; Wolinsky et al., 1992). Still, one study identified lower educated elderly were more likely to be placed in institutions (Goodlin et al., 2004) and another had same result only for women (Tomiak et al., 2000). Better self-care and health status in higher educated people could be the explanations.

2.3.1.5. Family Size

Number of children reduced the odds of being place in nursing homes (Gaugler et al., 2007; Goodlin et al., 2004; Waidmann and Thomas, 2003).

2.3.1.6. Psychological Status

Elderly who reported that they had less control over their future health were more likely to be institutionalized (Wolinsky et al., 1992). Lower cognitive function was among the strongest predictors of nursing home placement (Gaugler et al., 2007); however, the result was from studies with actual utilization.

2.3.2. Enabling Factors

2.3.2.1. Income

Low-income elderly were often considered as having higher risk for long-term care needs (Gaugler et al., 2007; Martikainen et al., 2009). In the study with two different approaches: base-year model and time-varying model, insignificant result was found in the first approach; however, in the latter, women in third income quartile significantly had more risk than those in the lowest income quartile (Tomiak et al., 2000). Another study reported significance of lower income only in nursing home placement, not in assisted living facilities (Waidmann and Thomas, 2003). The research in Finland could not find the relationship between income and long-term care (Goodlin et al., 2004). There was evidence that home caregiver service substitute nursing home service when income increased (Goda, Golberstein and Grabowski, 2011).

2.3.2.2. Living Arrangement

Elders, who lived alone without spouse or children, could have increased risk of institutionalization (Gaugler et al., 2007; Martikainen et al., 2009; Wolinsky et al., 1992).

2.3.2.3. Home Ownership

Owning a house reflected income stability; therefore, it could delay admission and reduce possibility of living in the long-term care institutes (Gaugler et al., 2007; Martikainen et al., 2009; Tomiak et al., 2000).

2.3.3. Need Factors

These factors were second strongest predictors of need for long-term care, aside from age. Nonetheless, each study defined and collected these variables differently. Most frequently used data were shown below:

2.3.3.1. Functional Disability

Generally, functional decline or decreased activity of daily living (ADL) score or index had significant impact on nursing home placement (Gaugler et al., 2007; Goodlin et al., 2004; Waidmann and Thomas, 2003), specifically household ADL (Wolinsky et al., 1992). For instrumental ADL (IADL), it had equivocal effects:

significant in some studies (Goodlin et al., 2004; Waidmann and Thomas, 2003) but insignificant in one study (Gaugler et al., 2007).

2.3.3.2. Frequent Physician Visits

Even though this variable was rarely taken into account, in one research had found that male elderly, who reported more than five health care service utilizations each year, were more likely to enter long-term care facilities later on (Tomiak et al., 2000).

2.3.3.3. Hospitalization

Admission to hospital in the past year increased risk of long-term care utilization (Goodlin et al., 2004; Tomiak et al., 2000; Wolinsky et al., 1992).

2.3.3.4. Specific diseases

Common debilitating chronic diseases were tested. Results from various investigations were illustrated below:

Table 2.1 Specific diseases and impact on long-term care utilizations

Diseases	Significant	Insignificant
Alzheimer's disease or dementia	Goodlin et al., 2004 Tomiak et al., 2000	Wolinsky et al., 1992
Stroke	Gaugler et al., 2007 Tomiak et al., 2000	Wolinsky et al., 1992
Mental disorders	Goodlin et al., 2004 Tomiak et al., 2000	-
Cancers	Gaugler et al., 2007 Goodlin et al., 2004	Wolinsky et al., 1992
Diabetes mellitus	Gaugler et al., 2007 Goodlin et al., 2004	-
Parkinson's disease	Goodlin et al., 2004	-
Musculoskeletal disorders	Tomiak et al., 2000	Tomiak et al., 2000 for arthritis
Hypertension	Gaugler et al., 2007	-

2.4. Long-term Care in Thai Context

2.4.1. Thai Elderly and Informal Care

Thailand has an increased share of older population due to the decreasing fertility rate and increasing life expectancy. There are major differences between Thai context and western countries.

Informal care for older persons within each family is the traditional form of long-term care. Evidences suggested that Thai adult children perceive that taking care of their old parents is a moral obligation, which is accepted as a social norm. Religious belief about repaying parents of Buddhists and filial piety of Muslims also enhance the strength of this cultural practice like in many of Asian countries (Knodel and Chayovan, 2008).

In addition, almost all of Thai elderly live with their spouse or their children; only 7.6 percent live alone. Although the percentage of Thai elderly who live with at least one child dropped sharply from 77 percent in 1986 to 59 percent in 2007, when children living nearby or next door were included, the decline was less substantial, from 80 percent to 71 percent accordingly (Knodel and Chayovan, 2008). Children who live adjacent to the elderly still have important role in supporting their parents (Knodel and Saengtienchai, 1998).

Finally, older Thai persons still give substantial support to their adult children: for example, household chores and taking care of their grandchildren of both co-resident and non-co-resident children (Knodel and Chayovan, 2008). These practices promote intergenerational exchanges between elderly and their children.

2.4.2. Thai Elderly's Demand for Formal Long-term Care

Evidence of the demand and factors determining the demand for long-term care of Thai elderly is still limited. There is a study of demand for elderly long-term care in Bangkok which included approximately 1,000 households and five types of long-term care services: home care agency, residential day care, short-term institutional care, residential or nursing home and long-term hospital care (Suwanrada, Sasut and Kamruangrit, 2010). Factors that decreased the demand were female gender, single marital status and larger family size. Prices also had negative effect on the demand, while income had opposite result. Moreover, older persons living in high-dependency-ratio households

or without co-residing children were more likely to utilize the services. Estimations of the demand for home care and both long- and short-term institutional care were congruent, except for: the statistical significance in the institutional care demand in totally dependent elderly, and insignificant negative impact of price on long-term institutional care demand. The negative effects of age and higher dependency level on demand for long-term care were found without statistical significance.

2.5. Conceptual Framework

In conclusion, this research would base on a conceptual framework illustrated below:
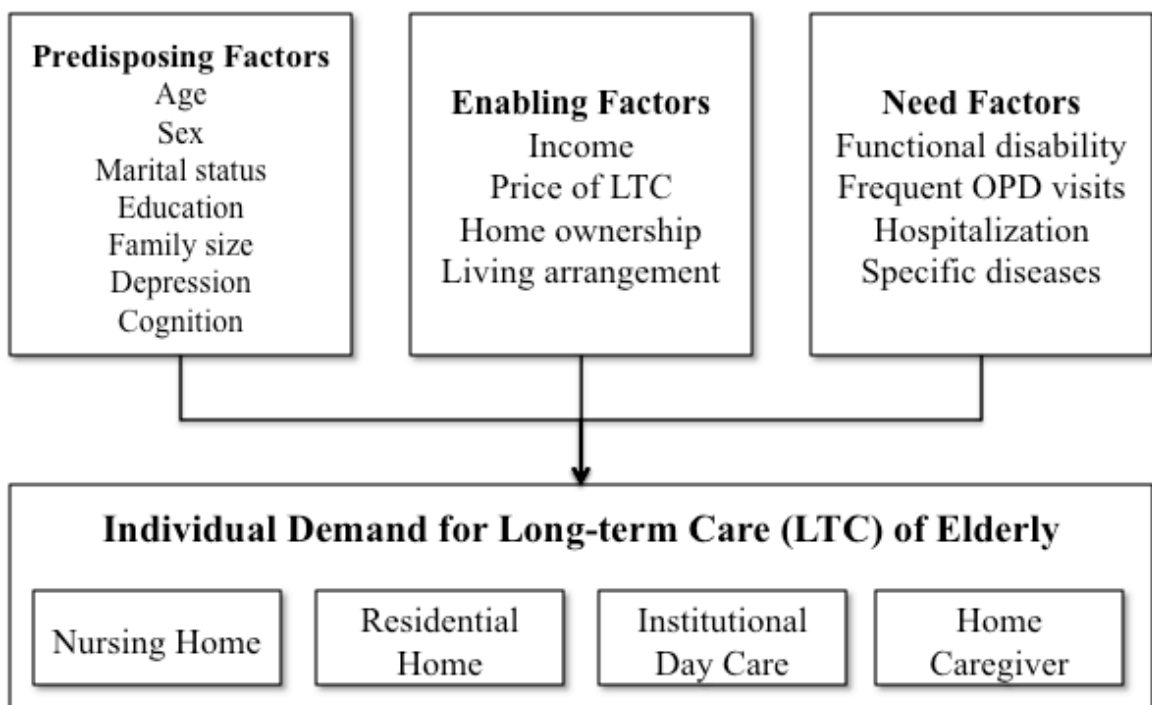
Conceptual Framework

2.6. Hypotheses

The demand for long-term care of elderly is determined by these following factors with expected signs and short reasons summarized from the literature review:

2.6.1. Predisposing factors

2.6.1.1   Demographic factors:

2.6.1.1.1   Age: positive due to increasing disability in older age

2.6.1.1.2   Sex: negative for female due to less cardiovascular disease risk and better health

2.6.1.1.3   Marital status: negative for single according to result of Thai study

2.6.1.2   Social structure

2.6.1.2.1   Education: negative due to better self-care and health status in higher educated people

2.6.1.2.2   Family size: negative due to the informal care availability from adult children

2.6.1.3   Psychological status:

2.6.1.3.1   Depression: negative due to the fear of being abandoned

2.6.1.3.2   Cognition: positive due to the increased ability to plan for the future if informal care would not be available.

2.6.2. Enabling factors

2.6.2.1   Income: positive due to the ability to purchase the service

2.6.2.2   Living arrangement: negative for more children living together due to the ability to provide informal care

2.6.2.3   Home ownership: positive due to its representation of higher income stability

2.6.2.4   Price of long-term care service: negative due to its negative effect on the ability to pay for the service

2.6.3. Need factors

2.6.3.1   General

2.6.3.1.1   Functional disability: negative for high ADL score or positive for physical limitations due to the need for assistance with daily activities

2.6.3.1.2   Frequent physician visits: positive due to the need for companions to visit hospitals and medication management

2.6.3.1.3   Hospitalization: positive due to the experience of being independent and worse health status

2.6.3.2 Specific: positive for presence of Stroke, Alzheimer's disease or dementia, musculoskeletal disorders excluded arthritis, mental disorders, cancers, and diabetes mellitus, due to the need for assistance in daily activities

CHAPTER III
RESEARCH METHODOLOGY

In Chapter 2, the definitions of long-term care and its demand had been stated. The factors affecting the demand for long-term care was categorized into predisposing factors, enabling factors and need factors. Most of Thai elderly live with their children or families; therefore, studies in Thailand had different results from those in western countries.

This chapter will explain the details of research design, sampling technique and data collection. In addition, the specific operational definitions and the model specifications of regression analysis are provided.

3.1 Research Design

Descriptive cross-sectional study design was used because of no previous available evidence of factors affecting the demand for formal long-term care of elderly in the Municipality of Muang District, Pathum Thai Province.

3.2 Methodology

3.2.1 Population and Sample

3.2.1.1 Target population

Thai elderly living in the Municipality of Muang District, Pathum Thani Province in 2011

3.2.1.2 Population to be sampled

Thai elderly living in the Municipality of Muang District, Pathum Thani Province in 2011 and registered in the population census which was from the Municipality of Muang District Health Service Center. The population census was divided into 25 communities and contained data regarding: person's identification card number, name (including initial and surname), age and house number.

3.2.1.3 Sampling technique

Stratified random sampling

Age was the strongest predictor of long-term care utilization; therefore, the elderly population were stratified by age group into 3 strata: young-old (60-69 years old), old-old (70-79 years old) and oldest-old (80 years old and over).

Population in each stratum were sampled by simple random technique and the sample size in a stratum was made proportional to the number of elderly in the stratum, called proportional allocation.

3.2.2 Eligibility Criteria

3.2.2.1 <u>Inclusion criteria</u>

3.2.2.1.1 the living elderly individuals who were sampled and could communicate with the interviewers.

3.2.2.1.2 in case of elderly individuals' inability to make decision or communicate because of certain types of disabilities, family members who usually made decision or communicated for them could be the representatives.

3.2.2.1.3 Elderly individuals who did not utilize or currently utilized any type of formal long-term care were included. Though the questions about the demand were not asked in interviewing with the ones currently utilize formal long-term care.

3.2.2.2 <u>Exclusion criteria</u>

3.2.2.2.1 the elderly individuals who cannot be contacted or reached by home visit, for examples, unable to find the house, incorrect address without telephone number, etc.

3.2.2.2.2 the elderly individuals or representatives who are not willing to be enrolled in the study

3.2.3 Sample size calculation

$$n \quad = \quad N / (1+Ne^2)$$

While;　n　=　sample size

　　　　N　=　numbers of target population

　　　　e　=　acceptable sampling error, in this study = 0.05 (Because it is the level that is acceptable for general studies in social science)

In the Municipality of Muang District, Pathum Thani Province, there were 1,864 elderly people (Population Census, 2010), which meant the sample size should be at least 330 elderly individuals. However, the population were sampled to cover non-response individuals for 50% of the calculated sample size. Then 495 elderly individuals would be stratified to each stratum according to table 3.1.

Table 3.1 Results of stratified random sampling

Stratum	Numbers	Proportion	Sample Size
Young-old	846	0.45	223
Old-old	668	0.36	178
Oldest-old	350	0.19	94
Total	1,864	1.00	495

Unfortunately, after the data collection had been started for two months, the disastrous flood had covered all over the area of the Municipality of Muang District, except for Pathum Thani Hospital. As a result, transportation to and from the Municipality had been disrupted and the data collection had to stop. Muang District was flooded for four consecutive months; however, the researcher did not continue collecting data after the flood due to the drastic change of the situation.

3.2.4 Study Site

The Municipality of Muang District, Pathum Thani Province

3.3 Operational Definitions

3.3.1 Dependent Variables

Due to limited knowledge of sampled elderly about different types of long-term care services (discussed further in Chapter IV), only 3 types of services were included in the regression analysis: full-time home caregiver, daytime home caregiver and residential home care services.

3.3.1.1 Individual demand for full-time home caregiver

The individual demand for full-time home caregiver was defined as odds to use the full-time home caregiver in the scenario-based interview. The dummy variable was defined as: absolutely/ possibly/ maybe = 1, and unlikely/ not at all = 0.

3.3.1.2 Individual demand for daytime home caregiver

The individual demand for daytime home caregiver was defined as odds to use the daytime home caregiver in the scenario-based interview. The dummy variable was defined as: absolutely/ possibly/ maybe = 1, and unlikely/ not at all = 0.

3.3.1.3 Individual demand for residential home care

The individual demand for residential home care was defined as odds to use the permanent residential home service in the scenario-based interview. This service was provided by government and private organization, which offered care at higher price. The dummy variable was defined as: absolutely/ possibly/ maybe = 1, and unlikely/ not at all = 0.

3.3.2 Independent Variable

3.3.2.1 Age

Age meant ages of individual patients in years old. This information was collected from individual official records, such as identification card, because many elderly could not remember the year of their births.

3.3.2.2 Sex

A dummy variable of elderly biological sex, specified as male = 0 and female = 1.

3.3.2.3 Marital status

For the demand for both types of home caregiver services, a dummy variable of marital status defined as single = 1 and otherwise = 0. However, the demand for residential home has been predicted perfectly by single marital status, so this variable was defined differently as: married = 1 and otherwise = 0.

3.3.2.4 Education

Education of each individual was defined in schooling years. The values were: early primary school = 4, late primary school = 6, junior high school = 9, high school = 12, high certificate = 14 and bachelor's degree = 16.

3.3.2.5 Family size

Family size in this study meant actual numbers of living children.

3.3.2.6 Depression

Thai Geriatric Depression Scale score (TGDS) (Train the Brain Forum Committee, 1994) was used to represent psychological status in sampled elderly. The score ranged from 0 to 26, with normal limit not exceed 12. Scores higher than 12 suggested major depressive disorder or other psychiatric disorders. The reliability was 0.93 by Kuder-Richardson Formula 20.

3.3.2.7 Cognition

Chula Mental Test (CMT) (Jitapunkul, 1996) was used to represent cognitive status in sampled elderly. The score ranged from 0 to 19, with normal limit not less than 15. Scores less than 15 suggested dementia. The sensitivity was 100% and the specificity was 90%.

3.3.2.8 Income

Total income per month is an individual income, including: own income from work, rents, interests, welfare, and income from others, such as family members. The logarithm of income to base 10 was used.

3.3.2.9 Price of long-term care services

Prices of long-term care were the average prices of services provided in the community. The scenario-based interview started from asking about individual demand at the average prices, then the prices offered were increased for 10% and 20%. After that the prices offered were decreased for 10% and 20%. Odds of individual demand for long-term care utilization at 5 levels of prices were obtained (average price, plus 10%, plus 20%, minus 10% and minus 20%). Each individual data would be expanded to 5

observations by repeated measure and prices were the only variables that varied between observations of each individual. The logarithm of price to base 10 was used.

3.3.2.10 Home ownership

Home ownership meant that the house, which the elder was living, belonged to him or her. This did not include houses that belonged to spouse or children. This was dummy variable: owning the house he or she was living = 1 and otherwise = 0.

3.3.2.11 Living arrangement

In the regression analysis, living alone could not be an independent variable due to the perfect prediction of binary response. So living arrangement in this model referred to numbers of children, including sons and daughters, who were living together.

3.3.2.12 Functional disability

Functional disability referred to limitation of activities of daily living (ADL), which was scored by Modified Barthel Index, Thai version (Loharjun, 2008). The score 100 meant normal ADL, while the score less than 100 through zero meant limited ADL. The intra-class correlation coefficient was 0.96.

In the regression analysis, ADL could not be an independent variable due to the perfect prediction of binary response. Therefore, counts of limitations of physical function were used as proxies. Physical Functions included vision, hearing and chewing. The counts ranged from 0 to 3. If the subject reported "poor" in one of those functions, the count = 1 and if reported "poor" in all functions, the counts = 3.

3.3.2.13 Frequent physician visits

Frequent physician visits meant that, in the past year, elderly had to go to see doctors for more than 5 times. This was dummy variable: more than 5 visits per year = 1 and otherwise = 0.

3.3.2.14 Hospitalization

Hospitalization was defined as hospital admission at least once in the past year for any reasons. This was a dummy variable: admitted at least once in the last year = 1 and otherwise = 0.

3.3.2.15 Underlying diseases

Underlying diseases included common chronic diseases in the community, which had significant impacts to long-term care usage from previous studies. They were stroke, Alzheimer's disease or dementia, musculoskeletal disorders, mental disorders, cancers and diabetes mellitus. For musculoskeletal disorders, arthritis was excluded due to insignificant impact on the demand for long-term care.

The dummy variable defined = 1 if the elderly had one or more of the diseases mentioned above, and defined = 0 if otherwise.

3.4 Data Collection

3.4.1 Sources of Data

3.4.1.1 Primary data

All individual data were collected by interview questionnaire

3.4.1.2 Secondary data

The population census data used for stratification and randomization were from the Municipality of Muang District.

3.4.2 Tool

The interview questionnaire comprised of 4 parts (Thai version of the questionnaire was in Appendix A):

Part 1 Health status
1) Underlying diseases
2) Limitations of physical functions: vision, hearing and chewing
3) General need factors: frequent outpatient visits and hospitalization
4) Activity of daily living (ADL) by Modified Barthel Index, Thai Version (Loharjun, Wannapira, Palivanit and Cumjun, 2008)
5) Screening of dementia by Chula Mental Test (Jitapunkul, Lailert, Worakul, Srikiatkhachorn and Ebrahim, 1996)
6) Screening of depression by Thai Geriatric Depression Scale (Train the Brain Forum Committee, 1994)

Part 2 Long-term care for elderly

1) Informal long-term care for elderly: availability and quality

2) Formal long-term care: knowledge, current or past usage

3) Demand for formal long-term care: scenario-based interview with 5 levels of price for each type of care

Part 3 General information of the elderly

1) Demographic and social factors: age, sex, marital status, education

2) Income

3) Living arrangement

4) Home ownership

Part 4 Burden to the caregiver

1) Suanprung Stress Test – 20 (SPST-20) (Mahatnirunkul, Poompaisalchai and Tapanya, 2002) Cronbach's α coefficient > 0.70

2) Health-related self-report (HRSR) scale (Kasantikul et al., 1997) for non-elderly caregiver (Cronbach's α coefficient 0.91) or Thai Geriatric Depression Scale (Train the Brain Forum Committee, 1994) for elderly caregiver

3) General information of the caregiver, similar to questionnaire part 3 for elderly

3.4.3 Methods of Data Collection

3.4.3.1 Surveyed local long-term care service price and calculated the average price for each type of care

3.4.3.2 Constructed the questionnaire according to the structure mentioned above.

3.4.3.3 The questionnaire was tested for content validity by 2 experts.

3.4.3.4 Submitted the questionnaire to Ethical Committee and edited the questionnaire according to the suggestions.

3.4.3.5 Trained the interviewers to use the questionnaire (5 nurses).

3.4.3.6 Tested the questionnaire with 30 elderly people from other districts or sub districts who came to Pathum Thani Hospital.

3.4.3.7 Adapted the questionnaire according to the problems occurred.

3.4.3.8 Re-submitted the adapted questionnaire to Ethical Committee.

3.4.3.9   Population census of the Municipality of Muang District was recorded into SPSS statistics version 18.0 file, and then sample cases were selected randomly from each age group according to the proportion of population age, or stratified random sampling.

3.4.3.10 A list that consisted of name, age and house number of the elderly samples was made and the sample group was divided into 25 communities, according to their addresses.

3.4.3.11 Interviewers contacted health volunteers or community leaders in the community by telephone calls or personal contact. Nurse practitioners at Pathum Thani Hospital helped facilitating this process. Communities were selected one by one, depending on the convenience.

3.4.3.12 The health volunteers or community leaders lead the way to elderly's houses and introduced the interviewers to elderly. Researcher team members interviewed the elderly and their caregivers (if present). In case the elderly cannot communicate with the interviewers, informal caregivers were interviewed instead (except for psychological tests). Similarly, if the elderly was not at home due to any reasons, adult children were interviewed instead.

3.4.3.13 When all of the samples in a community were interviewed, researcher team would move on to the next community.

3.4.3.14 Data from questionnaire were recorded into SPSS statistics version 18.0 file for data analysis.

3.5 Data Analysis

3.5.1 Descriptive Analysis

Descriptive method was used to describe frequency, mean, median and standard deviation of demographic, socioeconomic and clinical data.

3.5.2 Regression Analysis Model

The repeated binary logit regression was used to estimate the correlation between dependent and independent variables. Each individual data was expanded to 5 observations and price was the only independent variable that varied by 5 levels (average price, plus 10%, plus 20%, minus 10% and minus 20%)

$$\ln (PR_i/1-PR_i) = \beta_0 + \beta_1 X_i + e_i$$

$$\ln (PR_{LTC}/1-PR_{LTC}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR \text{ (or } \beta_3 MAR1) + \beta_4 EDU + \beta_5 FAM + \beta_6 GDS + \beta_7 CMT + \beta_8 I + \beta_9 P + \beta_{10} HOM + \beta_{11} LIV + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{LTC}/1-PR_{LTC}$ = Odds of utilizing long-term care services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

AGE = age (individual age from the official record e.g. identification card)

SEX = dummy variable for sex (female = 1, male = 0)

MAR = dummy variable for marital status for home caregiver service (full-time and daytime): single = 1, others = 0

MAR1 = dummy variable for marital status for residential home service: married = 1, others = 0

EDU = schooling years: early primary school = 4, late primary school = 6, junior high school = 9, high school = 12, high certificate = 14 and bachelor's degree = 16

FAM = family size; numbers of living children

GDS = Thai Geriatric Depression score (0-26, >12 = depressed)

CMT = Chula Mental Test score (0-19, <15 = demented)

I = logarithm of total income, including elderly's own income and income from others, to base 10

P = logarithm of price of formal long-term care service to base 10

HOM = dummy variable of home ownership: owing the house he or she was living = 1, otherwise = 0

LIV = living arrangement; numbers of children living together

LIM = counts of limitations of physical functions (vision, hearing and chewing), ranged from 0 – 3. If reported "poor" in one of those functions, value = 1.

OPD = dummy variable of frequent outpatient department visits: more than 5 times per year = 1, otherwise = 0

IPD = dummy variable of hospitalization: at least once in the last year = 1, otherwise = 0

DIS = dummy variable of underlying diseases (dementia, diabetes, stroke, musculoskeletal disorders and mental disorders): if one or more of these diseases were present = 1, otherwise = 0

e_i = error term

3.5.2.1 Individual demand for home caregiver (HC)

$$\ln(PR_{HC}/1\text{-}PR_{HC}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR + \beta_4 EDU + \beta_5 FAM + \beta_6 GDS + \beta_7 CMT + \beta_8 I + \beta_9 P + \beta_{10} HOM + \beta_{11} LIV + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{HC}/1\text{-}PR_{HC}$ = Odds of utilizing home caregiver services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

3.5.2.2 Individual demand for daytime home caregiver (DC)

$$\ln(PR_{DC}/1\text{-}PR_{DC}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR + \beta_4 EDU + \beta_5 FAM + \beta_6 GDS + \beta_7 CMT + \beta_8 I + \beta_9 P + \beta_{10} HOM + \beta_{11} LIV + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{DC}/1\text{-}PR_{DC}$ = Odds of utilizing daytime home caregiver services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

3.5.2.3 Individual demand for residential home care (RH)

$$\ln(PR_{RH}/1\text{-}PR_{RH}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR1 + \beta_4 EDU + \beta_5 FAM + \beta_6 GDS + \beta_7 CMT + \beta_8 I + \beta_9 P + \beta_{10} HOM + \beta_{11} LIV + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{RH}/1\text{-}PR_{RH}$ = Odds of utilizing residential home services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

3.5.3 Hypothesis Testing

Null hypothesis (H_0) and alternative hypothesis (H_a)

H_0: $\beta_i = 0$ (i = 1, 2, 3, …, m)

H_a: $\beta_j \neq 0$ at least one j (j = 1, 2, 3, …, n)

The Likelihood Ratio (LR) statistic was used to test the null hypothesis that includes all coefficients at a time. The LR statistic followed Chi-squared distribution with the degree of freedom equal to the number of explanatory variables (excluded constant term). The critical value in this study was determined at 5% level of significance (two-

sided). Null hypothesis would be rejected, if the calculated LR statistic wa s greater than the appropriate LR statistic.

The z-test was used to test individual regression coefficients. The critical z-value in this study was determined at 5% level of significance (two-sided). Null hypothesis would be rejected, if the calculated z-value was greater in absolute value than the critical z-value. That meant the coefficient could significantly affect dependent variable.

CHAPTER IV
RESULTS AND DISCUSSIONS

The survey was done in 11 communities out of 24 communities in the Municipality of Muang District, Pathum Thani Province from August to September 2011. 184 elderly were surveyed with interview questionnaires; however, 39 were death, 36 had moved to stay elsewhere (some of these elders had health problems and need informal care from families), 15 persons were not found and not known by health volunteers, six were away from home and two were unable to communicate without family members. Only one person rejected to participate in the study.

Among 85 elderly who were interviewed, 81 elderly answered interview questions by themselves. There were 2 elderly who stayed at other places and 2 elderly could not communicate with interviewers. For these latter elderly, 2 related main caregivers and 2 relatives who were not taking care of them answered the interview questions instead.

In this chapter, the results from the survey were illustrated in tables and narrative findings, according to the conceptual framework that was mentioned earlier. Repeated binary logit regressions were done for 3 types of formal long-term care for elderly and presented at the end.

4.1. Characteristics of the Sample
4.1.1. Predisposing Factors
4.1.1.1. Demographic Factors

Demographic parameters of the sample were tested with the population's parameters. Mean ages were tested by McNemar's test because the ages of both groups were not normally distributed. Chi-square test was performed with age groups and sex. Although the sample size was less than expected, the demographic characteristics of the sample were statistically similar to the population. Details are presented in table 4.1.

Table 4.1 Demographic characteristics of the sample and population

Characteristics	Sample (n=85) (%)	Population (n = 1,864)	*P*-value
Mean age ± SD (years old)	71.7 ± 7.9	72.1 ± 8.8	0.973
Age groups			0.826
- Young old (60-69)	41 (48.2)	846 (45.4)	
- Old old (70-79)	30 (35.3)	668 (35.8)	
- Oldest old (80 and over)	14 (16.5)	350 (18.8)	
Sex			0.573
- Female	54 (63.5)	1,105 (59.3)	
- Male	31 (36.5)	759 (40.7)	
Marital status			
- Married	43 (50.6)	-	
- Widowed	31 (36.5)	-	
- Single	8 (9.4)	-	
- Divorced	2 (2.4)	-	

Overall, most elderly aged between 60 – 79 years old, 71.7 years old in average. Numbers of female were almost twice as much as male. Half of the elderly were married and approximately a third were widowed.

4.1.1.2. Social Structure

As shown in table 4.2, approximately 75 percent of the elderly in the sample graduated at early primary school level or had no formal education at all. The average numbers of children were larger than current fertility rate, which was only 1.8 children per family between 2008 and 2010 (Poapongsakorn et al., 2011).

Table 4.2 Social structure of the sample

Social Structure	Sample (n=85) (%)
Education	
- None	12 (14)
- Early primary school	51 (60)
- Late primary school	4 (4.7)
- Junior high school	5 (5.9)
- High school	7 (8.2)
- High certificate	3 (3.5)
- Bachelor's degree	3 (3.5)
Family size	
- Numbers of living children: Mean ± SD	3.3 ± 2.2

4.1.1.3. Psychological Status

From table 4.3, percentage of depressed elderly was similar to the lower range of prevalence in Thai elderly, which was 17.5 to 82.3 percent (Wongpakaran, 2008). Percentage of demented elderly was in the middle range of Thai dementia prevalence, which was 3.2 to 27.3 percent (Wongpakaran, 2008).

Table 4.3 Psychological status

Psychological Status	Sample (n=85) (%)
Psychological status: depressed (TGDS > 12)	14 (16.5)
Mental status: abnormal (CMT < 15)	9 (10.6)

4.1.2. Enabling Factors

Means of income were in table 4.4. Half of all the elderly (42 persons) had the government pension as the only source of their own income, which was 500 baht per month. Moreover, 20 elderly did not receive any monetary support from their families. Nevertheless, most of the sample felt that their income was sufficient, owned a house, which meant income stability, and only a few had debt.

Table 4.4 Enabling factors

Enabling Factors	Sample (n=85) (%)
Total income	
- Mean ± SD	8,768.6 ± 10,068.4
- Median	5,000
- Min-Max	500-52,000
Own income	
- Mean ± SD	4,851 ± 7,527.1
- Median	500
- Min-Max	0-33,250
Income from family support	
- Mean ± SD	3,917.3 ± 5,667.8
- Median	2,000
- Min-Max	0-35,000
Perception of income sufficiency	65 (76.5)
Debt	7 (8.2)
Home Ownership	51 (60.0)
Living Arrangement	
- Living with spouse or children	68 (80.0)
- Living alone	4 (4.7)

4.1.3. Other Descriptive Results

Approximately a half of elderly in the sample knew only public residential home for destitute elderly as an only long-term care service for elderly. The second most known was home caregiver. In consequence, only three types of long-term care would be discussed further. Table 4.5 contained other interesting details.

Table 4.5 Other descriptive results

Other Descriptive Results	Sample (n=85) (%)
Religion	
- Buddhism	81 (95.3)
- Muslim	3 (3.5)
- Christian	1 (1.2)
Currently Working	28 (32.9)
Knowledge of formal long-term care	
- None	28 (32.9)
- Know 1-2 types	46 (54.1)
- Know 3 types and over	11 (12.9)
Types of formal long-term care known	
- Public retirement home/ Home for destitute elderly	54 (63.5)
- Home caregiver agency	19 (22.4)
- Private retirement home	11 (12.9)

4.2. Need Factors and Informal Care

4.2.1. General Need Factors

According to table 4.6, although there were 13 elderly who had decreased Modified Barthel Index score, 10 elderly (11.8 percent) reported the need for assistance in performing activities of daily living, which were high when compared to 6.9 percent of

general elderly in a national study (Yodpet, 2006). The other three denied the need, even though two of them were mild dependent. Perception of independence was one of the sources of elderly's happiness (Saengtienchai, Ketpitchayawattana, Angsuroj and Dayton, 2001).

Limitations in other senses (vision and hearing) and chewing were common and would be used to represent functional disability because the ADL could not be used in the regression model.

Table 4.6 General Need Factors

General Need Factors	Sample (n=85) (%)
Activity of daily livings (ADL score)	
- Independent (100)	72 (84.7)
- Dependent (<100)	13 (15.3)
- Minimal dependent (91-99)	3 (3.5)
- Mild dependent (75-90)	7 (8.2)
- Severe dependent (50-74)	2 (2.4)
- Total dependent (0-24)	1 (1.2)
Outpatient visits > 5 times/year	40 (47.1)
Hospitalization in the last year	10 (11.8)
Reported poor vision, hearing or chewing	
- 2 or more	15 (17.6)

4.2.2. Specific Need Factors

There was no elderly who had dementia or cancer, so the underlying diseases in the regression models were: diabetes mellitus (DM), musculoskeletal disorders (excluded osteoarthritis), stroke and mental disorders. Table 4.7 displayed common underlying diseases found in the sample.

Table 4.7 Specific need factors

Specific Need Factors	Sample (n=85) (%)
No Underlying Disease	4 (4.7)
Underlying Diseases	
- Hypertension	48 (56.5)
- Osteoarthritis	33 (38.8)
- Dyslipidemia	28 (32.9)
- Cataract	18 (21.2)
- Ischemic heart disease	14 (16.5)
- Diabetes mellitus (DM)	13 (15.3)
- Spondylosis	12 (14.1)

4.2.3. Informal Care

Among elderly who reported the need for long-term care, eight had informal caregivers, one utilized home caregiver service and the last one did not want to be taking care of. Six caregivers were interviewed and results were in table 4.8.

Most caregivers were women in their midlife who usually were overwhelmed with midlife crises (Intarakamhang, Raghavan, Choochom and Sucaromana, 2008). One of the caregiver was depressed according to the criteria of depression screening with Health-Related Self Report (Kasantikul et al., 1997). From Suanprung Stress Test – 20 (SPST-20) (Mahatnirunkul et al., 2002), two had mild stress, three had moderate stress and one had high stress. This information reflected moderate level of burden to the main informal caregiver for elderly.

Almost all of the caregivers could work for income and some even received monetary support from families; however, one who was a dressmaker earned significantly decreased income after becoming a caregiver. Four of the caregivers graduated at high educational level, which reflected high opportunity costs of their time. In addition, one of them was the elderly's sibling who could be assumed as another elderly; while, in general, first-degree related caregivers were children or in-laws (Yodpet, 2006).

Table 4.8 Informal caregivers

Characteristics	Caregivers (n=6)
Mean age ± SD (years old)	51.3 ± 4.5
Sex	
- Female	5
- Male	1
Marital status	
- Married	2
- Single	2
- Widowed/Divorced	2
Religion: Buddhism	6
Education	
- Late primary school	2
- High certificate	3
- Bachelor's degree	1
Family size (only living members)	
- Numbers of siblings: Mean ± SD	3.3 ± 0.5
- Numbers of children: Mean ± SD	1.0 ± 0.9
Relationship to the elderly	
- Children	3
- In-law	1
- Sibling	1
- Other relative	1
Currently working	5
Occupation	
- Housewife	1
- Self-employments	3
- Private sector employees	2
Total income: - Mean ± SD	11,750 ± 8,762.1
- Median	8,500
- Min-Max	2,500-25,000

Table 4.8 Informal caregivers (continued)

Characteristics	Caregivers (n=6)
Own income: - Mean ± SD	8,833.3 ± 7,277.8
- Median	7,000
- Min-Max	2,000-20,000
Income from family support - Mean ± SD	2,916.7 ± 3,105.1
- Median	2,750
- Min-Max	0-7,000

4.3. Individual Demand for Formal Long-Term Care

Obviously, most elderly in this study were independent. Many of them refused to plan for the foreseeable future because of the belief that talking or thinking about bad things were like cursing themselves. Most elderly relied on their children or grandchildren if they needed long-term care. This was consistent with a qualitative study, which reported that support from family when they were sick was one of the sources of happiness among elderly (Saengtienchai et al., 2001). Few elderly, who did not have children, were willing to die at home rather than being institutionalized. However, home caregiver seemed to be more acceptable for them.

Only one elderly reported experience of using formal long-term care service and continued hiring a home caregiver from an agency only in the daytime at the rate of 10,000 baht per month.

Table 4.9 Demand for formal long-term care

Demand for Formal Long-Term Care (FLTC)	Sample (n=85) (%)
Would not use any kind of FLTC	30 (35.3)
- Number of children = 0	3
- Numbers of children 1 – 2	3
- Numbers of children 3 and above	24
Might use: - Only free FLTC (for destitute elderly)	12 (14.1)
- Home caregiver service (full-time)	35 (41.2)
- Daytime home caregiver service	27 (31.8)
- Residential home service (full-time)	17 (20.0)

4.4. Empirical Results

Due to the regression was binary logit regression, there were some explanatory variables that could not be used due to their perfect predictions of binary outcomes: living alone, ADL score and single marital status (only for residential home). Other similar variables were used instead as described earlier and would be specified again in each table. 76 elderly who had no informal and formal long-term care utilization were included in the regression; therefore, the total observations were 380 (5 observations for each elder). There was no missing data.

4.4.1. Individual demand for home caregiver (HC)

$$\ln(PR_{HC}/1\text{-}PR_{HC}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR + \beta_4 EDU + \beta_5 FAM + \beta_6 GDS + \beta_7 CMT + \beta_8 I + \beta_9 P + \beta_{10} HOM + \beta_{11} LIV + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{HC}/1\text{-}PR_{HC}$ = Odds of utilizing home caregiver services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

From table 4.10, together all the regressors had a significant impact on the regressand because LR statistic was very high and *P*-value was smaller than 0.05. McFadden R^2 was 0.336, which meant 33.6% of the variation of dependent variable around its mean could be explained by the regression equation. The Hosmer-Lemeshow (H-L) test for goodness of fit statistic was insignificant, which meant that the dependent variable were not significantly different from those predicted by the model. Significant variables were MAR, FAM, GDS, CMT, I, P and OPD. From the correlation matrix in table 4.11, there was no colinearity between explanatory variables

Redundant variables were tested and omitted as shown in table 4.12. Even though it was insignificant, home ownership had negative sign. Elderly who let their children lived together in their house would expect some intergenerational exchange, such as informal care; therefore, they had decreased likelihood of hiring a home caregiver. The variable DIS was also insignificant. Its positive sign was similar with other need factors. The new regression results in table 4.13 were slightly different. After removing HOM and DIS, the *P*-values of SEX and LIV were decreased but still insignificant.

Table 4.10 Regression results of individual demand for home caregiver (HC)

Variable	Definition	N = 380	
		Coefficient	P-value
C	Constant term	15.434	0.138
AGE	Years old	0.052	0.102
SEX	Female = 1, male = 0	-0.656	0.091
MAR	Single = 1, others = 0	-2.179	0.033*
EDU	Schooling years	-0.083	0.090
FAM	Numbers of living children	-0.564	0.000*
GDS	Score 0-26, >12 depressed	-0.173	0.000*
CMT	Score 0-19, <15 demented	0.957	0.000*
I	Log of total income per month to base 10	0.878	0.031*
P	Log of price of HC	-10.175	0.000*
HOM	Own a house = 1, otherwise = 0	-0.183	0.632
LIV	Numbers of children living together	0.309	0.086
LIM	Counts of physical limitations (vision, hearing and chewing) 0 – 3	0.249	0.307
OPD	Frequent doctors visits (>5/year) = 1, otherwise = 0	1.861	0.000*
IPD	Recent hospitalization (<1 year) = 1, otherwise = 0	1.100	0.067
DIS	Underlying disease: DM, stroke, musculoskeletal or mental disorders = 1, otherwise = 0	0.300	0.427

LR statistic (15 df) = 139.82, P-value = 0.000*

McFadden R-squared = 0.336

H-L statistic = 9.257, P-value (Chi-squared, df 8) = 0.321

* Statistically significant (P-value < 0.05)

Table 4.11 Correlation matrix of explanatory variables of HC model

	AGE	SEX	MAR	EDU	FAM	GDS	CMT	I	P	HOM	LIV	LIM	OPD	IPD	DIS
AGE	1.000														
SEX	-0.125	1.000													
MAR	-0.048	0.157	1.000												
EDU	-0.144	-0.079	-0.028	1.000											
FAM	0.306	-0.003	-0.464	-0.320	1.000										
GDS	0.208	0.121	-0.014	-0.220	0.101	1.000									
CMT	-0.201	0.013	-0.157	0.319	-0.132	-0.306	1.000								
I	-0.195	-0.018	-0.307	0.350	0.002	-0.322	0.244	1.000							
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000						
HOM	-0.039	-0.059	0.063	0.097	-0.278	-0.002	-0.016	0.077	0.000	1.000					
LIV	0.030	-0.056	-0.322	-0.285	0.446	-0.119	-0.106	0.116	0.000	-0.235	1.000				
LIM	0.212	0.080	-0.054	-0.272	0.228	-0.092	-0.136	0.013	0.000	0.113	0.378	1.000			
OPD	-0.142	0.094	0.153	0.238	-0.197	-0.019	0.008	0.018	0.000	0.148	-0.241	-0.076	1.000		
IPD	-0.064	-0.071	0.244	0.105	-0.125	-0.043	-0.096	-0.017	0.000	0.130	-0.135	-0.083	0.113	1.000	
DIS	0.000	-0.120	0.108	0.179	-0.109	-0.115	0.038	-0.055	0.000	0.122	-0.041	0.076	-0.115	-0.072	1.000

Table 4.12 Tests for redundant variables of HC model

Variable(s)	Log likelihood ratio	P-value (Chi-squared)
HOM	0.230	0.631
DIS	0.633	0.426
HOM DIS	0.834	0.659

Table 4.13 Regression results of individual demand for HC, omitted HOM & DIS

Variable	Definition	N = 380	
		Coefficient	P-value
C	Constant term	15.995	0.122
AGE	Years old	0.046	0.136
SEX	Female = 1, male = 0	-0.707	0.063
MAR	Single = 1, others = 0	-1.933	0.034*
EDU	Schooling years	-0.068	0.134
FAM	Numbers of living children	-0.540	0.000*
GDS	Score 0-26, >12 depressed	-0.172	0.000*
CMT	Score 0-19, <15 demented	0.951	0.000*
I	Log of total income per month to base 10	0.802	0.042*
P	Log of price of HC	-10.143	0.000*
LIV	Numbers of children living together	0.309	0.069
LIM	Counts of physical limitations (vision, hearing and chewing) 0 – 3	0.249	0.274
OPD	Frequent doctors visits (>5/year) = 1, otherwise = 0	1.743	0.000*
IPD	Recent hospitalization (<1 year) = 1, otherwise = 0	0.952	0.097

LR statistic (15 df) = 138.98, P-value = 0.000*

McFadden R-squared = 0.334

H-L statistic = 11.364, P-value (Chi-squared, df 8) = 0.182

* Statistically significant (P-value < 0.05)

For predisposing factors category, demographic characteristic and social structure coefficients had signs as expected: odds of utilizing home care service increased in older, male, marital status other than single, lower educated, lower numbers of living children,

lower degree of depression and higher cognitive function. However, there was statistical significant only for marital status, family size and both psychological status. Single elderly were less likely to utilize the long-term service due to less family support; therefore, they could not be sure of their sustainability of income to pay for the care. Larger family size or more numbers of living children decreased the demand due to the availability of informal caregivers. Depressed elderly denied home care service and cognitively competent elderly were more likely to utilize the service. Depression caused increased emotional need and low self-esteem; therefore, elderly who had negative mood rather needed more emotional support from family members than a paid worker. Whereas cognitively competent elderly could speculate their future need for long-term care, which might not be available from their working children.

In the next category, enabling factors, signs of coefficients were the same as hypothesized, except for living arrangement. Even though this variable was insignificant, more children living together had some positive effect on the demand for formal home caregiver. The numbers of children living together did not reflect the dependency ratio, which could be high if there were more children aged less than 14 years old co-residing. Households with higher dependency ratio were less capable of providing informal care for elderly (Suwanrada et al., 2010). The significant variables were income and price. More income increased the ability to pay; therefore, could increased long-term care utilization, opposite to the service price.

Table 4.14 Descriptive statistics for explanatory variables of HC model

Explanatory Variable	Mean	S.D.	Explanatory Variable	Mean	S.D.
AGE	70.38	6.28	P	3.87	1.10
SEX	0.62	0.49	HOM	0.62	0.49
MAR	0.09	0.29	LIV	0.90	2.27
EDU	5.51	6.42	LIM	0.57	0.82
FAM	3.30	1.90	OPD	0.47	0.50
GDS	6.43	0.48	IPD	0.08	0.27
CMT	17.79	0.06	DIS	0.28	0.45
I	3.72	4.15			

All coefficients of need factors had positive effects to the demand as predicted; nevertheless, only frequent outpatient visits had significant impact to the demand. This might reflect the need for accompanying person to go to hospital; which was also found in another study in northeastern provinces (Theewanda and Sanjai, 2002).

Table 4.14 described the descriptive statistics for explanatory variables.

4.4.2. Individual demand for daytime home caregiver (DC)

$$\ln (PR_{DC}/1\text{-}PR_{DC}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR + \beta_4 EDU + \beta_5 FAM + \beta_6 GDS + \beta_7 CMT + \beta_8 I + \beta_9 P + \beta_{10} HOM + \beta_{11} LIV + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{DC}/1\text{-}PR_{DC}$ = Odds of utilizing daytime home caregiver services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

According to table 4.15, LR statistic was 146.69 and *P*-value was 0.000; therefore, independent variables had a significant impact on the dependent variable. McFadden R^2 was 0.490 or 49.0% of the variation of dependent variable around its mean could be explained by the model. Moreover, the dependent variable did not differ from the model prediction because the Hosmer-Lemeshow (H-L) test for goodness of fit was insignificant. The correlation matrix of DC model was identical to the correlation matrix of HC model (table 4.11).

Redundant variables were tested and omitted as shown in table 4.16. Unlike the full-time home caregiver (HC) model, MAR had positive sign, which might be due to the need for minimum intensity of care or daytime companion among single elderly. On the other hand, LIV had insignificant positive sign as the same as in the HC model. The new regression results in table 4.17 were slightly different.

Table 4.15 Regression results of individual demand for daytime home care (DC)

Variable	Definition	N = 380	
		Coefficient	P-value
C	Constant term	31.919	0.051
AGE	Years old	-0.029	0.552
SEX	Female = 1, male = 0	-1.798	0.002*
MAR	Single = 1, others = 0	0.704	0.582
EDU	Schooling years	-0.206	0.016*
FAM	Numbers of living children	-0.418	0.039*
GDS	Score 0-26, >12 depressed	-0.267	0.014*
CMT	Score 0-19, <15 demented	1.796	0.000*
I	Log of total income per month to base 10	3.441	0.000*
P	Log of price of DC	-19.179	0.000*
HOM	Own a house = 1, otherwise = 0	-1.223	0.041*
LIV	Numbers of children living together	0.095	0.704
LIM	Counts of physical limitations (vision, hearing and chewing) 0 – 3	1.600	0.000*
OPD	Frequent doctors visits (>5/year) = 1, otherwise = 0	1.625	0.003*
IPD	Recent hospitalization (<1 year) = 1, otherwise = 0	2.786	0.001*
DIS	Underlying disease: DM, stroke, musculoskeletal or mental disorders = 1, otherwise = 0	1.138	0.043*

LR statistic (15 df) = 146.69, P-value = 0.000*

McFadden R-squared = 0.490

H-L statistic = 4.322, P-value (Chi-squared, df 8) = 0.827

* Statistical significant value (P-value < 0.05)

Table 4.16 Tests for redundant variables of DC model

Variable(s)	Log likelihood ratio	P-value (Chi-squared)
MAR	0.294	0.588
LIV	0.145	0.703
MAR LIV	0.375	0.829

Table 4.17 Regression results of individual demand for DC, omitted MAR & LIV

Variable	Definition	N = 380	
		Coefficient	P-value
C	Constant term	32.420	0.044*
AGE	Years old	-0.027	0.568
SEX	Female = 1, male = 0	-1.745	0.002*
EDU	Schooling years	-0.228	0.003*
FAM	Numbers of living children	-0.437	0.008*
GDS	Score 0-26, >12 depressed	-0.281	0.010*
CMT	Score 0-19, <15 demented	1.763	0.000*
I	Log of total income per month to base 10	3.436	0.000*
P	Log of price of DC	-19.070	0.000*
HOM	Own a house = 1, otherwise = 0	-1.390	0.009*
LIM	Counts of physical limitations (vision, hearing and chewing) 0 – 3	1.648	0.000*
OPD	Frequent doctors visits (>5/year) = 1, otherwise = 0	1.677	0.001*
IPD	Recent hospitalization (<1 year) = 1, otherwise = 0	2.878	0.000*
DIS	Underlying disease: DM, stroke, musculoskeletal or mental disorders = 1, otherwise = 0	1.138	0.040*

LR statistic (15 df) = 146.32, P-value = 0.000*

McFadden R-squared = 0.488

H-L statistic = 4.189, P-value (Chi-squared, df 8) = 0.840

* Statistical significant value (P-value < 0.05)

Almost all of the coefficient estimates in table 4.17 had statistical significant, except for AGE which had different sign from HC model. Older persons probably needed more intensive care than daytime home care. Other predisposing, enabling and need factors were similar; however, the effects of income and price were twice as much as in the HC model. This could be the result of the less intensive a nature of the day care when compare to the full-time care. Elderly could view this type of care as less necessary. Younger, male, lower educated and lower numbers of living children related with higher odds of daytime home care demand. Those who were more depressed and had less mental ability were less likely to use the service.

All of need factors were statistically significant. Elderly with more physical limitations and certain underlying chronic diseases were significantly more likely to utilize daytime home service. This could be explained by the need for help with higher-level activities of daily living or medication management. Older patients who had recent experience of hospital admission were strongly more likely to use daytime home caregiver. This could result from the realization of necessity of care during recovery or the lack of informal care at that moment.

4.4.3. Individual demand for residential home (RH)

$$\ln (PR_{RH}/1\text{-}PR_{RH}) = \beta_0 + \beta_1 AGE + \beta_2 SEX + \beta_3 MAR1 + \beta_4 GDS + \beta_5 CMT + \beta_6 I + \beta_7 P + \beta_8 EDU + \beta_9 HOM + \beta_{10} LIV + \beta_{11} FAM + \beta_{12} LIM + \beta_{13} OPD + \beta_{14} IPD + \beta_{15} DIS + e_i$$

Where; $PR_{RH}/1\text{-}PR_{RH}$ = Odds of utilizing residential home services in scenario-based interview (answers absolutely/ possibly/ maybe = 1, answers unlikely/ not at all = 0)

Significance of H-L statistic was found when performing goodness of fit test (table 4.18). This meant that the model prediction was different from the dependent variable or model misspecification. However, from the correlation matrix in table 4.19, there was no multicollinearity problem.

Table 4.18 Regression results of individual demand for residential home (RH)

Variable	Definition	N = 750	
		Coefficient	P-value
C	Constant term	19.406	0.003*
AGE	Years old	-0.085	0.075
SEX	Female = 1, male = 0	-2.362	0.000*
MAR1	Married = 1, others = 0	1.401	0.048*
EDU	Schooling years	-0.010	0.865
FAM	Numbers of living children	0.034	0.783
GDS	Score 0-26, >12 depressed	-0.381	0.000*
CMT	Score 0-19, <15 demented	-0.083	0.610
I	Log of total income per month to base 10	1.123	0.011*
P	Log of price of RH	-4.928	0.000*
HOM	Own a house = 1, otherwise = 0	2.071	0.000*
LIV	Numbers of children living together	0.670	0.032*
LIM	Counts of physical limitations (vision, hearing and chewing) 0 – 3	-2.646	0.000*
OPD	Frequent doctors visits (>5/year) = 1, otherwise = 0	0.930	0.038*
IPD	Recent hospitalization (<1 year) = 1, otherwise = 0	0.660	0.305
DIS	Underlying disease: DM, stroke, musculoskeletal or mental disorders = 1, otherwise = 0	-2.304	0.001*

LR statistic (15 df) = 171.87, P-value = 0.000*

McFadden R-squared = 0.416

H-L statistic = 21.436, P-value (Chi-squared, df 8) = 0.006

* Statistical significant value (P-value < 0.05)

Table 4.19 Correlation matrix of explanatory variables of RH Model

	AGE	SEX	MAR	EDU	FAM	GDS	CMT	I	P	HOM	LIV	LIM	OPD	IPD	DIS
AGE	1.000														
SEX	-0.170	1.000													
MAR	-0.447	-0.402	1.000												
EDU	-0.202	0.126	0.083	1.000											
FAM	0.345	0.007	0.045	-0.228	1.000										
GDS	-0.070	0.083	-0.142	-0.175	0.162	1.000									
CMT	-0.160	0.007	0.166	0.372	-0.347	-0.161	1.000								
I	-0.066	-0.101	-0.014	0.550	-0.052	-0.209	0.255	1.000							
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000						
HOM	-0.026	0.006	0.063	0.049	-0.224	-0.121	0.260	0.346	0.000	1.000					
LIV	0.185	-0.086	-0.065	-0.262	0.522	-0.008	-0.299	0.068	0.000	-0.098	1.000				
LIM	0.283	0.267	-0.225	-0.233	0.217	-0.055	-0.324	-0.058	0.000	0.100	0.395	1.000			
OPD	-0.114	0.356	-0.064	0.284	-0.093	0.047	-0.004	0.161	0.000	0.063	-0.111	-0.031	1.000		
IPD	0.128	-0.292	0.212	0.118	0.163	-0.124	-0.040	0.192	0.000	0.141	0.059	0.076	0.212	1.000	
DIS	-0.245	-0.006	0.177	0.272	-0.152	-0.175	0.282	0.149	0.000	0.086	-0.213	-0.100	-0.183	-0.141	1.000

Table 4.20 Tests for redundant variable and goodness-of-fit for RH model

Variable	Log likelihood ratio	P-value (Chi-squared)
EDU	0.029	0.865

* Statistical significant value (*P*-value < 0.05)

When omitted EDU from RH model as shown in table 4.20, H-L statistic value decreased markedly and no longer had statistical significance (table 4.21).

Table 4.21 Regression results of individual demand for RH, omitted EDU

Variable	Definition	N = 750	
		Coefficient	P-value
C	Constant term	19.668	0.002*
AGE	Years old	-0.088	0.055
SEX	Female = 1, male = 0	-2.334	0.000*
MAR1	Married = 1, others = 0	1.419	0.043*
FAM	Numbers of living children	0.040	0.740
GDS	Score 0-26, >12 depressed	-0.376	0.000*
CMT	Score 0-19, <15 demented	-0.086	0.592
I	Log of total income per month to base 10	1.086	0.005*
P	Log of price of RH	-4.929	0.000*
HOM	Own a house = 1, otherwise = 0	2.055	0.000*
LIV	Numbers of children living together	0.668	0.033*
LIM	Counts of physical limitations (vision, hearing and chewing) 0 – 3	-2.620	0.000*
OPD	Frequent doctors visits (>5/year) = 1, otherwise = 0	0.912	0.036*
IPD	Recent hospitalization (<1 year) = 1, otherwise = 0	0.665	0.301
DIS	Underlying disease: DM, stroke, musculoskeletal or mental disorders = 1, otherwise = 0	-2.269	0.000*

LR statistic (15 df) = 171.85, *P*-value = 0.000*

McFadden R-squared = 0.416

H-L statistic = 13.436, *P*-value (Chi-squared, df 8) = 0.098

* Statistical significant value (*P*-value < 0.05)

Even though there were some similarities, results of the residential home (RH) model regression differed from home caregivers in many ways. First of all, education caused model misspecification and had to be removed. Therefore, the elderly made their decision to stay in residential home regardless of their educational background. The more numbers of living children slightly increased the demand, while the more cognitive function score decreased it. However, both findings were insignificant. The elderly who had more children were probably more confident that their children would not abandon them if they lived in residential home. In addition, the likelihood of utilizing institutional service was influenced by smaller effect of price when compared to home services. This type of care might be chosen with more necessity. Home ownership increased the chance of using residential home due to the effect of income stability. It was different from the expected sign that was evidenced in western countries. Two of the need factors, which were physical limitations and underlying diseases, made the elderly avoided being placed in institutions. The negative effects of age and higher dependency level on demand for long-term care were also found in another larger study in Bangkok, 1,000 households included (Suwanrada et al., 2010). This could result from the increased feeling of insecurity in elderly with some health problems.

Table 4.22 Descriptive statistics for explanatory variables of RH model

Explanatory Variable	Mean	S.D.	Explanatory Variable	Mean	S.D.
AGE	70.16	6.02	P	3.92	0.16
SEX	0.61	0.49	HOM	0.61	0.49
MAR1	0.56	0.50	LIV	1.24	1.21
FAM	3.24	2.22	LIM	0.55	0.81
GDS	6.36	6.43	OPD	0.48	0.50
CMT	17.81	1.90	IPD	0.08	0.27
I	3.71	0.48	DIS	0.28	0.45

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

Thailand has become an aging society; therefore, planning for the care of increasing elderly population is very crucial. Older persons need long-term care due to their physical degeneration and underlying diseases. Even though the main portion of long-term care is from families or informal care, there are substantial numbers of elderly who need the formal types of care. Unfortunately, the knowledge regarding this area is still limited. The purpose of this study is to identify the demand for formal long-term care of elderly who live in a municipality in one of Bangkok vicinity provinces, and factors that can influence it. From the theoretical background, factors are divided into predisposing, enabling and need factors. Questionnaire interviews were done in 85 elderly. Questions included general information, health status and scenario-based interview for each type of formal care. After that, data analysis was done by descriptive statistics and logistic regression.

This chapter would provide conclusions drawn from this study. The recommendations, limitations and suggestions for further study were also declared.

5.1 Conclusions

Characteristics of elderly in this sample from the Municipality of Muang District, Pathum Thani Province were concluded in the first following paragraphs by the categories of the factors interested. Then the summaries of informal and formal care situations were in the next. After that, the logistic regression results as well as descriptions of the table of scenarios were presented in the last two paragraphs.

First of all, for predisposing factors, they aged between 60 and 79 years old. Most of them were female, married or widowed and had early primary school education. Some had psychological problems such as depression (16.5%) and dementia (10.6%) from the screening test. Secondly, for enabling factors, their median income was 5,000 baht per month, included income support from families at the median of 2,000 baht per month. Three fourths of them perceived that their income was sufficient and only few had debts. Sixty percent owned the house that they were living and 80 percent lived with spouse or children. Interestingly, a third did not know any kind of formal long-term care, while the

most well known type was the public retirement home or home for destitute elderly, especially the so-called "Ban Bang Khae". Even though some of them knew home caregiver service and private residential home, the knowledge was still relatively limited when compared to the various types of elderly care. Finally, for the need factors, there were 13 dependent elderly, whereas only 10 of them admitted that they needed assistance. Denial of need for care possibly resulted from limited knowledge of long-term care choices and attempt to gain happiness from perception of independence (Saengtienchai et al., 2001). This could result in even more serious complications, such as falls or helplessness in emergent situations, which could be better prevented in long-term care facilities (Rubenstein and Josephson, 2006). Almost all of the elderly had at least one underlying diseases, such as hypertension and dyslipidemia. Moreover, half of them had frequent outpatient visits (more than 5 times per year). In contrast, only approximately 10 percent had significant limitations of vision, hearing or chewing, and had experienced hospitalization in the past year.

Most dependent elderly in the sample utilized informal long-term care and only one of them was currently using full-time home care service. Five of the informal caregivers were middle-aged woman who generally had self-perception of life crisis (Intarakamhang et al., 2008). They experienced more or less burden from care giving that made one depressed and four moderately to highly stressful. Most of them worked and received income support from family, which might be the reasons that they could continue care giving. When it came to the formal care issues, a third of the sample denied any type available and would rely only on the informal care. However, most of them who denied the service had three or more children. Home care service, including full-time and daytime, was the most popular choice among elderly who reported the probability of using formal elderly care. Residential home was less common, selected by a fifth of the sample.

The repeated binary logistic regression was done in three models: home care, daytime home care and residential home services. Independent choices between each type of long-term care were assumed. The analysis results were different between three types of care. Firstly, the results from home care (HC) model could be interpreted that, on average, elderly in this municipality had the probability to choose home care service for 6.4 percent or 120 elderly out of 1,864. Odds of using this type of care were significantly greater in those who had marital status other than single, smaller numbers of living children, lower depression score, higher cognitive score and frequent outpatient visits. The demand was also affected by income and price like normal goods and services: higher income

increased the demand and price decreased the demand. These results were similar with the results from actual utilization studies. Secondly, daytime home care (DC) utilization probability was 0.3% for average elderly; therefore, 6 elderly out of 1,864 would hire these caregivers. DC Regression model was similar to HC model except for the significant increased likelihood in: male elderly who were less educated, not owning the house, had certain underlying diseases, more physical limitations and recent hospital admission. In addition, the coefficient of price was twice as much of the HC model. This reflected that DC was relatively less necessary in the viewpoint of elderly. Lastly, residential home care (RH) probability of using was 0.3% for average elderly, thus 6 elderly out of 1,864 would use RH care. Education factor caused model misspecification, so it was omitted from the model. The cognitive score turned to be insignificant. Moreover, the price coefficient was the smallest, only about half of the HC. It meant that when elderly reported the RH demand, it was relatively more necessary than other types of care.

Data in table 5.1 provided better understanding about the regression results by illustrating probability of utilizing three types of formal LTC in elderly with certain characteristics. The values were filled in each appropriate variable and changed from odds to probabilities. Male elderly could have chosen residential home, despite the fact that he was healthy. On the other hand, it was almost impossible for female elderly to choose to be institutionalized, no matter how sick they were. It was obvious that daytime home care could be an alternative for long-term care in vulnerable population, especially single elderly, as the probabilities of using were relatively very high. Furthermore, decreasing the price for 20% could increase full-time home care utilization from approximately 30 to slightly over 50 percent but not the residential home. Depression, represented by GDS score, had significant effect on every model. When a single elderly woman became less depressed, from mildly depressed to the average GDS score, the probability of using home care service increased substantially comparable to decreasing the price.

Table 5.1 Probability of utilizing three types of formal LTC in certain elderly

No.	Characteristics of elderly	Probability of utilization (percent)		
		Home care service	Daytime home care	Residential Home
1	**Healthy old man**	31.0	17.4	31.6
	- 65-year-old man, married, 3 children, - early primary school education, - GDS score 0, CMT score 19, - living with 1 child, income at average			
2	**Old woman with underlying diseases**	61.5	34.9	0.7
	- 70-year-old woman, married, 3 children, - early primary school education, - GDS score 0, CMT score 19, - living with 1 child, income at average, - underlying diabetes mellitus with frequent outpatient visit			
3	**Single, sick, depressed old woman**	28.5	99.3	0.0
	- 65-year-old woman, single, - early primary school education, - GDS score 13, CMT score 19, - income at average, - underlying diabetes mellitus with frequent outpatient visit, 3 physical limitations, hospitalized in the past year			
4	**Single, sick, depressed old woman with decreased price (20%) of formal care**	52.3	100.0	0.0
	- 65-year-old woman, single, - early primary school education, - GDS score 13, CMT score 19, - income at average, - underlying diabetes mellitus with frequent outpatient visit, 3 physical limitations, hospitalized in the past year - price decrease for 20%			
5	**Single, sick, old woman without depression**	55.2	99.9	0.0
	- 65-year-old woman, single, - early primary school education, - GDS score 0, CMT score 19, - income at average, - underlying diabetes mellitus with frequent outpatient visit, 3 physical limitations, hospitalized in the past year			

5.2 Recommendations

5.2.1　Informal care for elderly was the major type of care for those who were dependent; therefore, the government should facilitate it by every mean, such as tax deduction for children who cared for their older parents, increasing the job opportunities for informal caregiver at home, etc. At the same time, the measures of support to relief the caregiver burdens should be operated, for example community support group, psychological counseling, etc.

5.2.2　Elderly had limited knowledge about formal long-term care and its alternatives. Information concerning formal long-term care and choices should be publicized to increase knowledge of elderly and family. As a result, they could find the appropriate care when they were in need.

5.2.3　To introduce formal long-term care service into this community, home care service should be the first choice due to the preference of elderly from the sample, especially the daytime home care. Most importantly, the daytime home care was well accepted by the vulnerable group, such as single, female elderly.

5.2.4　The local government should facilitate measures to decrease price of long-term care for elderly to reduce the barrier to the service.

5.2.5　Depression was common in elderly and could have negative effect on determination to use formal long-term care when it became necessary. Therefore, there should be a screening and proper management of this condition in the community.

5.3 Limitation of the Study

5.3.1　Due to the unexpected small sample size, only small numbers of dependent elderly were included in the study.

5.3.2　Among 184 elderly surveyed, 36 of them had moved to stay elsewhere without clear identification of reasons, which probably related to physical disabilities. Therefore, the collected sampled elderly might lack the representation of the dependent elderly population.

5.3.3　The models for regression were assumed as three independent equations for different types of long-term care, while they could be substitutes in the long-term care market.

5.3.4　Only elderly individual decision was taken into account in this study; whereas, sometimes the decision came from the whole household or family.

5.3.5　Living with children was probably not a good representative of availability of informal care. It was common in Thai context that elderly helped with house chores and childcare. Therefore, dependency ratio should be used instead.

5.3.6　Repeated binary logit regression assumed independent observations. The Generalized Estimating Equation (GEE) method has more ability to control for the correlation among outcomes for a given subject, or repeated measure, and the capacity to handle multiple covariates (Williamson, 1996).

5.4　Suggestions for Further Study

5.4.1　Future study of long-term care for elderly should enroll larger sample size to increase the power of estimation.

5.4.2　Psychological status should be thoroughly investigated because of its significance for choosing to utilize the formal care when it was needed.

5.4.3　Study of home caregiver service should be prioritized due to preference and acceptability of elderly.

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APPENDICES

APPENDIX A
INTERVIEW QUESTIONNAIRE

แบบสัมภาษณ์ผู้สูงอายุ

<u>คำชี้แจงในการสัมภาษณ์</u>

1. เจ้าหน้าที่สัมภาษณ์แนะนำตัวเองว่าเป็น "พยาบาลวิชาชีพผู้ช่วยเก็บข้อมูลวิจัย" และแจ้งข้อมูล
   สำหรับผู้มีส่วนร่วมในการวิจัยให้ผู้สูงอายุหรือญาติผู้ให้สัมภาษณ์แทนได้ทราบ

2. สัมภาษณ์ผู้สูงอายุตามรายชื่อที่กำหนดให้ได้ข้อมูลที่มากที่สุด หากไม่สามารถสัมภาษณ์ผู้สูงอายุได้
   ให้สัมภาษณ์ผู้ดูแลที่เป็นญาติแทน โดยไม่ต้องตอบส่วนที่ 1.3 และ 1.4
   (งดสัมภาษณ์ผู้ดูแลที่เป็นลูกจ้าง <u>ยกเว้น</u> ส่วนที่ 4)

3. แบบสัมภาษณ์มีทั้งหมด 16 หน้า ประกอบด้วย 4 ส่วน ดังนี้

   ส่วนที่ 1 สภาวะสุขภาพของผู้สูงอายุ

           ส่วนที่ 1.1 สภาวะสุขภาพทั่วไป

           ส่วนที่ 1.2 ความสามารถในการปฏิบัติกิจวัตรประจำวัน

           ส่วนที่ 1.3 แบบคัดกรองภาวะสมองเสื่อม

           ส่วนที่ 1.4 แบบวัดความเศร้าในผู้สูงอายุของไทย

   ส่วนที่ 2 การดูแลระยะยาวสำหรับผู้สูงอายุ

           ส่วนที่ 2.1 การดูแลระยะยาวอย่างไม่เป็นทางการ

           ส่วนที่ 2.2 การดูแลระยะยาวอย่างเป็นทางการ

   ส่วนที่ 3 ข้อมูลทั่วไปของผู้สูงอายุ

   ส่วนที่ 4 ภาระต่อผู้ดูแลหลักของผู้สูงอายุ

           ส่วนที่ 4.1 แบบวัดความเครียดสวนปรุง

           ส่วนที่ 4.2 แบบวัดด้วยตนเองเพื่อตรวจหาโรคซึมเศร้าในประชากรไทย/
   แบบวัดความเศร้าในผู้สูงอายุของไทย

           ส่วนที่ 4.3 ข้อมูลทั่วไปของผู้ดูแลหลักของผู้สูงอายุ

<u>คำชี้แจงในการกรอกข้อมูล</u>

        กรุณาเขียนเครื่องหมาย X หรือ / ลงในช่อง ☐ และเขียนข้อความลงในช่องว่างที่กำหนดให้
อย่างชัดเจนและตรงกับความเป็นจริงในทุกส่วนของแบบสัมภาษณ์

ส่วนที่ 1 สภาวะสุขภาพของผู้สูงอายุ

ส่วนที่ 1.1 สภาวะสุขภาพทั่วไป

<u>คำชี้แจง</u> กรุณาเขียนเครื่องหมาย X หรือ / ลงในช่อง ☐ และเขียนข้อความลงในช่องว่างอย่างชัดเจน

1. ปัจจุบันผู้สูงอายุมีโรคประจำตัวที่ทราบจากแพทย์หรือเจ้าหน้าที่สาธารณสุขดังต่อไปนี้บ้างหรือ
   (เริ่มถามจากข้อแรกว่ามีหรือไม่ ไปจนถึงข้อสุดท้าย และตอบได้มากกว่า 1 ตัวเลือก)

ความดันโลหิตสูง	☐
เบาหวาน	☐
ไขมันในเลือดสูง	☐
ข้อเข่าเสื่อม	☐
กระดูกสันหลังเสื่อม	☐
โรคกล้ามเนื้อ กระดูก และข้ออื่นๆ (ระบุ)...............	☐
ต้อกระจก	☐
โรคตาอื่นๆ (ระบุ)...............	☐
อัมพฤกษ์/อัมพาต	☐
เส้นเลือดหัวใจตีบ/กล้ามเนื้อหัวใจขาดเลือด	☐
ความจำเสื่อม/สมองเสื่อม/อัลไซเมอร์	☐
โรคทางสมองอื่นๆ (ระบุ)...............	☐
ความผิดปกติทางจิตอื่นๆ (ระบุ)...............	☐
มะเร็ง (ระบุ)...............	☐
โรคไต/ทางเดินปัสสาวะ (ระบุ)...............	☐
โรคปอด (ระบุ)...............	☐
โรคตับ (ระบุ)...............	☐
โรคทางเดินอาหาร (ระบุ)...............	☐
โรคอื่นๆ (ระบุ)...............	☐

2. ผู้สูงอายุสามารถมองเห็นได้ชัดเจนหรือไม่   ชัดเจนโดยไม่ต้องใส่แว่นตา ☐
   ชัดเจนแต่ต้องใส่แว่นตา ☐
   ไม่ชัดเจน ☐
   ไม่เห็นเลย ☐

3. ผู้สูงอายุสามารถได้ยินชัดเจนหรือไม่   ชัดเจนโดยไม่ต้องใส่หูฟัง ☐
   ชัดเจนแต่ต้องใส่หูฟัง ☐
   ไม่ชัดเจน ☐
   ไม่ได้ยินเลย ☐

4. ผู้สูงอายุสามารถเคี้ยวอาหารได้ดีหรือไม่ เคี้ยวได้ดีโดยไม่ต้องใส่ฟันปลอม ☐
เคี้ยวได้ดีแต่ต้องใส่ฟันปลอม ☐
เคี้ยวได้ไม่ค่อยดี ☐
เคี้ยวไม่ได้เลย ☐

5. ผู้สูงอายุต้องพบแพทย์เพื่อรักษาปีละกี่ครั้ง มากกว่า 5 ครั้งต่อปี ☐
ไม่เกิน 5 ครั้งต่อปี ☐

6. ผู้สูงอายุต้องรักษาตัวในโรงพยาบาลใน 1 ปีที่ผ่านมาหรือไม่ ไม่ใช่ ☐ (ข้ามไปส่วนที่ 1.2)
ใช่ ☐

7. ใน 1 ปีที่ผ่านมา ผู้สูงอายุต้องรักษาตัวในโรงพยาบาล..........ครั้ง ครั้งสุดท้ายเมื่อ...............เดือนก่อน
สาเหตุ/โรคที่แพทย์วินิจฉัย คือ (ระบุ)...

ส่วนที่ 1.2 ความสามารถในการปฏิบัติกิจวัตรประจำวัน
<u>คำชี้แจง</u> กรุณาเขียนเครื่องหมายวงกลมลงบนตัวเลขในตารางที่กำหนดให้อย่างชัดเจน
(แนวทางการให้คะแนนอยู่ในคู่มือผู้สัมภาษณ์)

	การประเมิน	ทำไม่ได้เลย	ต้องการความช่วยเหลือเป็นส่วนใหญ่	ต้องการความช่วยเหลือบางส่วน	ต้องการความช่วยเหลือเล็กน้อย	ทำได้เอง
1	การดูแลสุขลักษณะส่วนตัว	0	1	2	3	4
2	การอาบน้ำ	0	1	2	3	4
3	การกินอาหาร	0	1	2	3	4
4	การใช้ห้องน้ำ	0	1	2	3	4
5	การใส่เสื้อผ้า	0	1	2	3	4
6	การควบคุมการถ่ายอุจจาระ	0	1	2	3	4
7	การควบคุมการปัสสาวะ	0	1	2	3	4
8	การเคลื่อนที่/การใช้รถเข็นนั่ง	0	1	2	3	4
9	การเคลื่อนย้าย	0	1	2	3	4
10	การขึ้นลงบันได	0	1	2	3	4

ส่วนที่ 1.3 แบบคัดกรองภาวะสมองเสื่อม

<u>คำชี้แจง</u> กรุณาเขียนเครื่องหมายวงกลมลงบนตัวเลขในตารางที่กำหนดให้อย่างชัดเจน

ถ้าไม่แน่ใจให้เขียนคำตอบของผู้สูงอายุไว้บริเวณที่ว่าง

	คำถาม/คำสั่ง	คำตอบ/การกระทำที่ถูกต้อง	ผู้ป่วยตอบ/ทำ	
			ถูก	ผิด
1	ปีนี้คุณอายุเท่าไหร่	= 2554 – (ปีเกิด)	1	0
2	ขณะนี้กี่โมง (อาจตอบคลาดเคลื่อนได้ 1 ชั่วโมง)	(ดูนาฬิกา)	1	0
3	พูดคำว่า "ร่ม กระทะ ประตู" ให้ฟังชัดๆ 2 ครั้ง แล้วบอกให้ผู้ถูกทดสอบพูดทวนคำทั้งสามทันที	ร่ม	1	0
		กระทะ	1	0
		ประตู	1	0
4	เดือนนี้เดือนอะไร (อาจตอบเป็นเดือนไทยหรือเดือนสากลก็ได้)		1	0
5	คนนั้นเป็นใคร (ให้ถามถึงบุคคล 2 คน เช่น แพทย์ พยาบาล หรือบุคคลใกล้เคียง)	บุคคลที่ 1	1	0
		บุคคลที่ 2	1	0
6	ข้าว 1 ถังมีกี่ลิตร หรือ กี่กิโลกรัม	20 ลิตร/15 กิโลกรัม	1	0
7	ให้ผู้ถูกทดสอบทำตามคำสั่งที่จะบอกต่อไปนี้ "ให้ตบมือสามทีแล้วกอดอก"	ทำครบทุกขั้นตอน	1	0
8	จงบอกความหมายของสุภาษิตต่อไปนี้ "หนีเสือปะจระเข้"	หนีจากสิ่งไม่ดีไปพบสิ่งไม่ดีอีกหรือแย่กว่าเดิม	1	0
9	บอกผู้ถูกทดสอบว่า <u>จงฟังประโยคต่อไปนี้ให้ดี เมื่อฟังจบแล้วให้พูดตามทันที</u> "ฉันชอบเสียงเพลง ดอกไม้ แต่ไม่ชอบหมา"	พูดได้ถูกต้องตามลำดับทั้งประโยค	1	0
10	ถามผู้ถูกทดสอบว่า <u>ถ้าลืมกุญแจไว้ในบ้านจะทำอย่างไร</u>	คำตอบมีเหตุผล เป็นไปได้ และไม่ก่อให้เกิดความเสียหายมาก	1	0
11	บอกให้ผู้ถูกทดสอบนับเลขจาก 10 – 20	นับได้ถูกต้องทั้งหมด	1	0
12	ชี้ไปที่นาฬิกา แล้วถามว่า คืออะไร/เรียกว่าอะไร	นาฬิกา	1	0
	ชี้ไปที่ปากกา แล้วถามว่า คืออะไร/เรียกว่าอะไร	ปากกา	1	0
13	บอกให้ผู้ถูกทดสอบลบเลขทีละ 3 จาก 20 ทั้งหมด 3 ครั้ง (20 – 3 = 17, 17 – 3 = 14, 14 – 3 = 11) (ให้คะแนนจำนวนเลขที่ลบได้ถูกต้องครั้งละ 1 คะแนน)	ลบครั้งที่ 1 ถูกต้อง	1	0
		ลบครั้งที่ 2 ถูกต้อง	1	0
		ลบครั้งที่ 3 ถูกต้อง	1	0
		รวม		

คะแนนต่ำกว่า 15 แสดงว่าน่าจะมีความผิดปกติ ส่งต่อศูนย์บริการสาธารณสุขเทศบาล

ส่วนที่ 1.4 แบบวัดความเศร้าในผู้สูงอายุของไทย

<u>คำชี้แจง</u> กรุณาเขียนเครื่องหมายวงกลมลงบนตัวเลขในตารางที่กำหนดให้อย่างชัดเจน

	ประเมินความรู้สึกของท่านในช่วงเวลา 1 สัปดาห์ที่ผ่านมา	ใช่	ไม่ใช่
1.	คุณพอใจกับชีวิตความเป็นอยู่ตอนนี้	0	1
2.	คุณไม่อยากทำในสิ่งที่เคยสนใจหรือเคยทำเป็นประจำ	1	0
3.	คุณรู้สึกว่าชีวิตของคุณช่วงนี้ว่างเปล่าไม่รู้จะทำอะไร	1	0
4.	คุณรู้สึกเบื่อหน่ายบ่อยๆ	1	0
5.	คุณหวังว่าจะมีสิ่งที่ดีเกิดขึ้นในวันหน้า	0	1
6.	คุณมีเรื่องกังวลอยู่ตลอดเวลา และเลิกคิดไม่ได้	1	0
7.	ส่วนใหญ่แล้วคุณรู้สึกอารมณ์ดี	0	1
8.	คุณรู้สึกกลัวว่าจะมีเรื่องไม่ดีเกิดขึ้นกับคุณ	1	0
9.	ส่วนใหญ่คุณรู้สึกมีความสุข	0	1
10.	บ่อยครั้งที่คุณรู้สึกไม่มีที่พึ่ง	1	0
11.	คุณรู้สึกกระวนกระวาย กระสับกระส่ายบ่อยๆ	1	0
12.	คุณชอบอยู่กับบ้านมากกว่าที่จะออกนอกบ้าน	1	0
13.	บ่อยครั้งที่คุณรู้สึกวิตกกังวลเกี่ยวกับชีวิตข้างหน้า	1	0
14.	คุณคิดว่าความจำของคุณไม่ดีเท่าคนอื่น	1	0
15.	การที่มีชีวิตอยู่ถึงปัจจุบันนี้ เป็นเรื่องน่ายินดีหรือไม่	0	1
16.	คุณรู้สึกหมดกำลังใจ หรือเศร้าใจบ่อยๆ	1	0
17.	คุณรู้สึกว่าชีวิตคุณค่อนข้างไม่มีคุณค่า	1	0
18.	คุณรู้สึกกังวลมากกับชีวิตที่ผ่านมา	1	0
19.	คุณรู้สึกว่าชีวิตนี้ยังมีเรื่องน่าสนุกอีกมาก	0	1
20.	คุณรู้สึกลำบากที่จะเริ่มต้นทำอะไรใหม่ๆ	1	0
21.	คุณรู้สึกกระตือรือร้น	0	1
22.	คุณรู้สึกสิ้นหวัง	1	0
23.	คุณคิดว่าคนอื่นดีกว่าคุณ	1	0
24.	คุณอารมณ์เสียง่ายกับเรื่องเล็กๆ น้อยๆ อยู่เสมอ	1	0
25.	คุณรู้สึกอยากร้องไห้บ่อยๆ	1	0
26.	คุณมีความตั้งใจในการทำสิ่งหนึ่งสิ่งใดได้ไม่นาน	1	0
27.	คุณรู้สึกสดชื่นในเวลาตื่นนอนตอนเช้า	0	1
28.	คุณไม่อยากพบปะพูดคุยกับคนอื่น	1	0
29.	คุณตัดสินใจอะไรได้เร็ว	0	1
30.	คุณมีจิตใจสบาย แจ่มใสเหมือนก่อน	0	1
	รวม		

คะแนนมากกว่า 12 แสดงว่าอาจมีภาวะซึมเศร้า ส่งต่อศูนย์บริการสาธารณสุขเทศบาล

ส่วนที่ 2 การดูแลระยะยาวสำหรับผู้สูงอายุ

ส่วนที่ 2.1 การดูแลระยะยาวอย่างไม่เป็นทางการสำหรับผู้สูงอายุ

1. ผู้สูงอายุรู้สึกว่ามีความจำเป็นต้องมีคนช่วยดูแลในการดำเนินชีวิตประจำวันหรือไม่
   - ไม่จำเป็นต้องให้ใครดูแล (ข้ามไปส่วนที่ 2.2) ☐
   - จำเป็นและมีผู้ดูแล ☐
   - จำเป็นแต่ไม่ต้องการ/ไม่อยากให้ใครดูแล ☐
   - จำเป็นแต่ไม่มีญาติที่ว่างงานมาดูแล ☐
   - จำเป็นแต่ไม่มีญาติ ☐
   - อื่นๆ (ระบุ).. ☐

2. ผู้สูงอายุมีผู้ดูแลหลักในการดำเนินชีวิตประจำวันหรือไม่ (ผู้ดูแลหลัก หมายถึง ผู้ที่ใช้เวลาในการดูแลผู้สูงอายุมากที่สุดเมื่อนับจำนวนชั่วโมงที่ดูแลในแต่ละวัน ไม่นับเวลาที่ผู้ดูแลนอนหลับ)
   - ไม่มีผู้ดูแลเลย (ข้ามไปส่วนที่ 2.2) ☐
   - มีผู้ดูแลหลายคนช่วยกันโดยไม่มีผู้ดูแลหลัก (ข้ามไปส่วนที่ 2.2) ☐
   - มีผู้ดูแลหลักคนเดียว (ทำข้อ 3 ต่อไป) ☐

3. ผู้ดูแลหลักดังกล่าวอาศัยอยู่ในครัวเรือนเดียวกันหรือไม่
   - อยู่ในครัวเรือนเดียวกัน ☐
   - ไม่ได้อยู่ในครัวเรือนเดียวกันแต่อยู่ในหมู่บ้าน/ละแวกเดียวกัน ☐
   - อยู่ไกลแต่เดินทางมาดูแลผู้สูงอายุ ☐

4. ผู้ดูแลหลักทำหน้าที่ดูแลผู้สูงอายุมานาน...............ปี............เดือน โดยใช้เวลาวันละ............ชั่วโมง

5. ผู้สูงอายุพอใจกับการดูแลอย่างที่เป็นอยู่นี้มากน้อยเพียงใด
   - พอใจมาก ☐   ค่อนข้างพอใจ ☐   เฉยๆ ☐   ไม่ค่อยพอใจ ☐   ไม่พอใจเลย ☐

6. หากผู้ดูแลหลักติดธุระหรือมีเหตุผลใดๆที่ทำให้ไม่สามารถดูแลผู้สูงอายุได้ในกรณีต่อไปนี้ มีการแก้ไขปัญหาอย่างไร (ตอบทั้ง 2 กรณี และเลือกเพียง 1 วิธีที่ใช้บ่อยที่สุดในแต่ละกรณี)

วิธีแก้ปัญหา	กรณีช่วงเวลากลางวัน	กรณีติดต่อกันหลายวัน
ปล่อยให้ผู้สูงอายุอยู่เองตามลำพัง	☐	☐
ให้สมาชิกในครัวเรือนคนอื่นดูแลแทน	☐	☐
ให้ลูกหลาน/ญาติพี่น้องที่อยู่คนละครัวเรือนมาดูแลแทน	☐	☐
ฝากผู้สูงอายุไว้กับเพื่อนบ้าน	☐	☐
จ้างคนมาดูแลผู้สูงอายุที่บ้าน	☐	☐
นำผู้สูงอายุไปฝากไว้ที่บ้านของลูกหลาน/ญาติพี่น้อง	☐	☐
นำผู้สูงอายุไปฝากไว้ที่สถานบริการที่รับดูแลกลางวัน	☐	☐
อื่นๆ (ระบุ)..	☐	☐

ส่วนที่ 2.2 การดูแลระยะยาวอย่างเป็นทางการสำหรับผู้สูงอายุ

        การดูแลระยะยาวอย่างเป็นทางการสำหรับผู้สูงอายุ หมายถึง การดูแลผู้สูงอายุที่ไม่สามารถ
ช่วยเหลือตนเองในการดำเนินชีวิตประจำวันได้ โดยต้องชำระ<u>ค่าบริการ</u>ให้กับผู้ดูแล

    1.   ท่านเคยรู้จัก/เคยใช้บริการการดูแลระยะยาวอย่างเป็นทางการสำหรับผู้สูงอายุต่อไปนี้บ้างหรือไม่

ประเภทของการดูแลระยะยาวอย่างเป็นทางการ (ตอบได้มากกว่า 1 ข้อ)	ความรู้		การใช้บริการ*	
	รู้จัก	ไม่รู้จัก	เคยใช้	ไม่เคย
1. โรงพยาบาลที่ให้การดูแลระยะยาวสำหรับผู้สูงอายุ	☐	☐	☐	☐
2. สถานบริบาลผู้สูงอายุ (เนอร์สซิ่งโฮม)/ สถานพยาบาลผู้สูงอายุ	☐	☐	☐	☐
3. บ้านพักคนชราของเอกชน	☐	☐	☐	☐
4. บ้านพักคนชราของรัฐ สถานสงเคราะห์ผู้สูงอายุ หรือมูลนิธิ	☐	☐	☐	☐
5. ที่อยู่อาศัยเฉพาะผู้สูงอายุ (บริการที่ให้ผู้สูงอายุหรือผู้เตรียมตัวเป็นผู้สูงอายุเช่าซื้อบ้านเป็นระยะเวลา 30 ปี โดยอยู่อาศัยได้จนเสียชีวิต แต่ไม่มีกรรมสิทธิ์ในบ้าน)	☐	☐	☐	☐
6. ศูนย์บริการ/บริษัทจัดส่งผู้ดูแลให้มาดูแลที่บ้าน/โรงพยาบาล	☐	☐	☐	☐
7. อื่นๆ (ระบุ)...	☐	☐	☐	☐

        *กรณีที่ตอบว่าเคยใช้บริการขอใดข้อหนึ่งให้ตอบข้อ 2 ถ้าไม่เคยใช้บริการใดเลยข้ามไปข้อ 5

    2.   ในปัจจุบันผู้สูงอายุใช้บริการการดูแลระยะยาวอย่างเป็นทางการในข้อ 1 อยู่หรือไม่

                กำลังใช้บริการอยู่ (ตอบข้อ 3) ☐
                เลิกใช้บริการมาไม่เกิน 1 ปี (ตอบข้อ 3) ☐
                เลิกใช้บริการมานานกว่า 1 ปี (ข้ามไปข้อ 4) ☐

    3.   ลักษณะการใช้บริการและค่าบริการของการดูแลผู้สูงอายุอย่างเป็นทางการที่ใช้อยู่/เคยใช้

ประเภทของการดูแลระยะยาวอย่างเป็นทางการ (เลือกตอบเพียงประเภทเดียวที่ใช้บริการล่าสุด)	ใช้อยู่/เคยใช้	ลักษณะบริการ		ค่าบริการ (บาทต่อเดือน)
		ค้างคืน	ไปกลับ	
1. โรงพยาบาลที่ให้การดูแลระยะยาวสำหรับผู้สูงอายุ	☐	☐	☐	....
2. สถานบริบาลผู้สูงอายุ (เนอร์สซิ่งโฮม)/ สถานพยาบาลผู้สูงอายุ	☐	☐	☐	....
3. บ้านพักคนชราของเอกชน	☐	☐	☐	....
4. บ้านพักคนชราของรัฐ สถานสงเคราะห์ผู้สูงอายุ หรือมูลนิธิ	☐	☐	☐	....
5. ที่อยู่อาศัยเฉพาะผู้สูงอายุ (บริการที่ให้ผู้สูงอายุหรือผู้เตรียมตัวเป็นผู้สูงอายุเช่าซื้อบ้านเป็นระยะเวลา 30 ปี โดยอยู่อาศัยได้จนเสียชีวิต แต่ไม่มีกรรมสิทธิ์ในบ้าน)	☐	☐	☐	....
6. ศูนย์บริการ/บริษัทจัดส่งผู้ดูแลให้มาดูแลที่บ้าน/โรงพยาบาล	☐	☐	☐	....
7. อื่นๆ (ระบุ)...	☐	☐	☐	....

4. สาเหตุสำคัญที่เลิกใช้บริการดูแลระยะยาวอย่างเป็นทางการสำหรับผู้สูงอายุเพราะเหตุใด

    ไม่มีความจำเป็นแล้ว ☐   ค่าใช้จ่ายสูง ☐   บริการไม่ดี ☐

    อื่นๆ (ระบุ).. ☐

5. <u>คำชี้แจง</u>

    ก่อนจะเริ่มตอบแบบสัมภาษณ์ข้อนี้ให้ผู้สัมภาษณ์แจ้งกับผู้สูงอายุหรือผู้ตอบแบบสัมภาษณ์แทน ดังนี้ "คำถามต่อไปนี้ไม่ได้ถามเพื่อเสนอขายสินค้าหรือบริการใดๆกับท่าน และไม่ได้ยัดเยียด หรือผูกมัดให้ผู้สูงอายุต้องใช้บริการใดๆ เพียงแต่เป็นการถามเพื่อให้ได้ข้อมูลค่าใช้จ่ายโดยเฉลี่ย สำหรับครัวเรือนของประชาชนในเขตเทศบาลเมืองปทุมธานี หากมีความจำเป็นต้องใช้บริการ สถานบริการสำหรับผู้สูงอายุ"

    คำถาม - ถ้ามีความจำเป็นต้องใช้บริการดูแลระยะยาวอย่างเป็นทางการสำหรับผู้สูงอายุ ท่านจะเลือกใช้บริการเหล่านี้หรือไม่

    ใช้บริการแน่นอน   หมายถึง   โอกาสที่จะเลือกใช้บริการร้อยละ 100 (100%)

    น่าจะใช้บริการ   หมายถึง   โอกาสที่จะเลือกใช้บริการร้อยละ 70-80 (70-80%)

    อาจจะใช้หรือไม่ใช้บริการ หมายถึง   โอกาสที่จะเลือกใช้บริการร้อยละ 50 (50%)

    ไม่น่าจะใช้บริการ   หมายถึง   โอกาสที่จะเลือกใช้บริการร้อยละ 20-30 (20-30%)

    ไม่ใช้บริการแน่นอน   หมายถึง   โอกาสที่จะเลือกใช้บริการร้อยละ 0 (0%)

    <u>คำชี้แจง</u> กรุณาเขียนเครื่องหมายวงกลมลงบนตัวเลขในตารางที่กำหนดให้อย่างชัดเจน

ลำดับ ที่	สถานที่	ผู้ดูแลผู้สูงอายุ	ช่วงเวลา	ค่าบริการ ต่อเดือน (บาท)	การเลือกใช้บริการ				
					ใช้บริการแน่นอน	น่าจะใช้บริการ	อาจจะใช้/ไม่ใช้บริการ	ไม่น่าจะใช้บริการ	ไม่ใช้บริการแน่นอน
1	สถานบริบาลผู้สูงอายุ/เนอร์สซิ่งโฮม	พยาบาล	ค้างคืน	24,000	100	70-80	50	20-30	0
2				22,000	100	70-80	50	20-30	0
3				20,000	100	70-80	50	20-30	0
4				18,000	100	70-80	50	20-30	0
5				16,000	100	70-80	50	20-30	0
6	บ้านพักคนชราของรัฐบาล	ลูกจ้างทั่วไป	ค้างคืน	7,200	100	70-80	50	20-30	0
7				6,600	100	70-80	50	20-30	0
8				6,000	100	70-80	50	20-30	0
9				5,400	100	70-80	50	20-30	0
10				4,800	100	70-80	50	20-30	0
11	บ้านพักคนชราเอกชน	ลูกจ้างทั่วไป	ค้างคืน	14,400	100	70-80	50	20-30	0
12				13,200	100	70-80	50	20-30	0
13				12,000	100	70-80	50	20-30	0
14				10,800	100	70-80	50	20-30	0
15				9,600	100	70-80	50	20-30	0

ลำ ดับ ที่	สถานที่	ผู้ดูแลผู้สูงอายุ	ช่วงเวลา	ค่าบริการ ต่อเดือน (บาท)	ใช้บริการแน่นอน	น่าจะใช้บริการ	อาจจะใช้/ไม่ใช้บริการฯ	ไม่น่าจะใช้บริการ	ไม่ใช้บริการแน่นอน
							การเลือกใช้บริการ		
16				18,000	100	70-80	50	20-30	0
17				16,500	100	70-80	50	20-30	0
18	บ้านพักคนชราเอกชน	ลูกจ้างทั่วไป	กลางวัน	15,000	100	70-80	50	20-30	0
19				13,500	100	70-80	50	20-30	0
20				12,000	100	70-80	50	20-30	0
21	สถานสงเคราะห์ผู้สูงอายุ หรือมูลนิธิ	ลูกจ้างทั่วไป	ค้างคืน	0	100	70-80	50	20-30	0
22	สถานสงเคราะห์ผู้สูงอายุ หรือมูลนิธิ	ลูกจ้างทั่วไป	กลางวัน	0	100	70-80	50	20-30	0
23				9,000	100	70-80	50	20-30	0
24				8,250	100	70-80	50	20-30	0
25	บ้าน	ลูกจ้างที่ผ่านการ อบรมแล้ว	ค้างคืน	7,500	100	70-80	50	20-30	0
26				6,750	100	70-80	50	20-30	0
27				6,000	100	70-80	50	20-30	0
28				12,000	100	70-80	50	20-30	0
29				11,000	100	70-80	50	20-30	0
30	บ้าน	ลูกจ้างที่ผ่านการ อบรมแล้ว	กลางวัน	10,000	100	70-80	50	20-30	0
31				9,000	100	70-80	50	20-30	0
32				8,000	100	70-80	50	20-30	0

ส่วนที่ 3 ข้อมูลทั่วไปของผู้สูงอายุ

บ้านเลขที่................. ชุมชน... ถนน.........................ตำบล.........................

1.   ผู้ตอบแบบสัมภาษณ์

                    ผู้สูงอายุตอบเอง (ข้ามไปตอบข้อ 3) ☐
                    ผู้ดูแลหลักที่เป็นญาติ (อยู่ในครัวเรือนเดียวกัน) ☐
                    ผู้ดูแลหลักที่เป็นญาติ (ไม่ได้อยู่ในครัวเรือนเดียวกัน) ☐
                    ญาติหรือสมาชิกในครัวเรือนที่ไม่ได้เป็นผู้ดูแลหลัก ☐
                    อื่นๆ (ระบุ)... ☐

2.   เหตุผลที่ตอบแบบสัมภาษณ์แทน

                    ผู้สูงอายุไม่อยู่ ☐
                    ผู้สูงอายุป่วย/ต้องการพักผ่อน ☐
                    ผู้สูงอายุไม่สามารถสื่อสารได้/มีปัญหาในการพูดและฟัง ☐
                    ผู้สูงอายุมีอาการป่วยทางจิต/หลงลืม/สมองเสื่อม/อัลไซเมอร์ ☐
                    อื่นๆ (ระบุ)... ☐

3.   เพศ   ชาย ☐   หญิง ☐

4.   วันเดือนปีเกิด..

5.   ศาสนา   พุทธ ☐   อิสลาม ☐   คริสต์ ☐   อื่นๆ......... ☐

6.   ระดับการศึกษาสูงสุด

              ไม่ได้เรียนหนังสือ ☐   อนุปริญญา/ ปวส. หรือเทียบเท่า ☐
       ประถมต้น (ป.1 – ป.4) หรือเทียบเท่า ☐   ปริญญาตรี ☐
          ประถมปลาย (ป. 6) หรือเทียบเท่า ☐   สูงกว่าปริญญาตรี ☐
               มัธยมต้นหรือเทียบเท่า ☐   อื่นๆ (ระบุ)......................... ☐
          มัธยมปลาย/ ปวช. หรือเทียบเท่า ☐

7.   สถานภาพสมรส   สมรส ☐   หม้าย ☐   โสด ☐   หย่า ☐

8.   จำนวนพี่น้องที่ยังมีชีวิตอยู่ (รวมผู้สูงอายุเองด้วย)...................คน บุตรที่ยังมีชีวิตอยู่...................คน

9.   ผู้ที่อาศัยอยู่ในครัวเรือนเดียวกันทั้งหมด..........คน มีใครบ้าง (ตอบได้มากกว่า 1 ข้อและระบุจำนวน)

                  ไม่มี/อยู่คนเดียว ☐   บุตรของบุตร...........คน ☐
                       คู่สมรส ☐   บิดา/มารดา...........คน ☐
                 บุตรชาย...........คน ☐   พี่/น้อง...........คน ☐
               บุตรหญิง...........คน ☐   ญาติ...........คน ☐
                 บุตรเขย...........คน ☐   อื่นๆ (ระบุ)..................... ....คน ☐
               บุตรสะใภ้...........คน ☐

10. ผู้สูงอายุมีญาติมิตรที่อยู่อาศัยในลักษณะต่างๆดังนี้หรือไม่ (ตอบได้มากกว่า 1 ข้อและระบุจำนวน)

บุตรที่อยู่บ้านติดกัน/ใกล้กัน........คน ☐   พี่/น้องที่อยู่บ้านติดกัน/ใกล้กัน........คน ☐

บุตรที่อยู่ไกลแต่จังหวัดเดียวกัน........คน ☐   ญาติที่อยู่บ้านติดกัน/ใกล้กัน........คน ☐

บุตรที่อยู่ต่างจังหวัด........คน ☐   เพื่อนบ้านที่ฝากดูแลบ้านได้........คน ☐

บุตรที่อยู่ต่างประเทศ........คน ☐

11. บ้านที่อยู่อาศัยในปัจจุบันเป็นของใคร

ตัวผู้สูงอายุเอง ☐   พี่น้อง/ ญาติ ☐

คู่สมรส ☐   เช่าอยู่ ☐

บุตร ☐   อื่นๆ (ระบุ).................................. ☐

บุตรเขย/ บุตรสะใภ้ ☐

12. ผู้สูงอายุยังประกอบอาชีพอยู่หรือไม่   ไม่ประกอบอาชีพ ☐   ประกอบอาชีพ ☐

13. อาชีพสุดท้ายหรืออาชีพปัจจุบันของผู้สูงอายุคืออาชีพใด

ไม่เคยประกอบอาชีพใด/ ทำงานบ้าน ☐   ลูกจ้างเอกชน ☐

ค้าขาย/ ธุรกิจส่วนตัว/ ครัวเรือน ☐   เกษตรกรรม ☐

ข้าราชการ/ ลูกจ้างรัฐบาล/ รัฐวิสาหกิจ ☐   อื่นๆ(ระบุ)........................ ☐

14. ผู้สูงอายุมีรายได้เป็นของตนเองหรือไม่ (ถ้ามี) ประมาณกี่บาทต่อเดือน

รายได้จากการประกอบอาชีพ..................................บาทต่อเดือน ☐

รายได้จากค่าเช่าต่างๆ..................................บาทต่อเดือน ☐

บำนาญ/กบข. ....บาทต่อเดือน ☐

เบี้ยยังชีพผู้สูงอายุ/ผู้พิการ/เงินสงเคราะห์ต่างๆ..................................บาทต่อเดือน ☐

อื่นๆ(ระบุ).................................. ....บาทต่อเดือน ☐

15. ผู้สูงอายุมีรายได้อื่นนอกจากรายได้ของตนเองหรือไม่ (ถ้ามี) ประมาณกี่บาทต่อเดือน

เงินที่ได้รับจากคู่สมรส..................................บาทต่อเดือน ☐

เงินที่ได้รับจากบุตรที่อยู่ในครัวเรือนเดียวกัน..................................บาทต่อเดือน ☐

เงินที่ได้รับจากบุตรที่อยู่ที่อื่น..................................บาทต่อเดือน ☐

อื่นๆ (ระบุ) ....บาทต่อเดือน ☐

16. รายได้ของผู้สูงอายุมีเพียงพอกับรายจ่ายหรือไม่   เพียงพอ ☐   ไม่เพียงพอ ☐

17. ผู้สูงอายุมีหนี้สินหรือไม่   มีหนี้สิน ☐   ไม่มีหนี้สิน ☐

ส่วนที่ 4 ภาระต่อผู้ดูแลหลักของผู้สูงอายุ (ถ้าไม่มีผู้ดูแลหลักไม่ต้องทำส่วนนี้)

ส่วนที่ 4.1 แบบวัดความเครียดสวนปรุง

<u>คำชี้แจง</u> ให้ผู้ดูแลผู้สูงอายุอ่านเอง/หรืออ่านให้ฟังกรณีอ่านหนังสือไม่ได้/มองไม่เห็น (ระบุด้วยว่าใช้วิธีใด)

ให้คุณอ่านหัวข้อข้างล่างนี้ แล้วสำรวจดูว่าในระยะ 6 เดือนที่ผ่านมา มีเหตุการณ์ในข้อใดเกิดขึ้นกับตัวคุณบ้าง ถ้าข้อไหนไม่ได้เกิดขึ้นให้ข้ามไปไม่ต้องตอบ แต่ถ้ามีเหตุการณ์ในข้อใดเกิดขึ้นกับตัวคุณ ให้ประเมินว่าคุณมีความรู้สึกอย่างไรต่อเหตุการณ์นั้น แล้วทำเครื่องหมายให้ตรงช่องตามที่คุณประเมิน โดย

คะแนนความเครียด 1 คะแนน หมายถึง ไม่รู้สึกเครียด
คะแนนความเครียด 2 คะแนน หมายถึง รู้สึกเครียดเล็กน้อย
คะแนนความเครียด 3 คะแนน หมายถึง รู้สึกเครียดปานกลาง
คะแนนความเครียด 4 คะแนน หมายถึง รู้สึกเครียดมาก
คะแนนความเครียด 5 คะแนน หมายถึง รู้สึกเครียดมากที่สุด

ข้อที่	ในระยะ 6 เดือนที่ผ่านมา	คะแนนความเครียด				
		1	2	3	4	5
1	กลัวทำงานผิดพลาด	1	2	3	4	5
2	ไปไม่ถึงเป้าหมายที่วางไว้	1	2	3	4	5
3	ครอบครัวมีความขัดแย้งกันในเรื่องเงินหรือเรื่องงานในบ้าน	1	2	3	4	5
4	เป็นกังวลเรื่องสารพิษ หรือมลภาวะในอากาศ น้ำ เสียง และดิน	1	2	3	4	5
5	รู้สึกว่าต้องแข่งขันหรือเปรียบเทียบ	1	2	3	4	5
6	เงินไม่พอใช้จ่าย	1	2	3	4	5
7	กล้ามเนื้อตึงหรือปวด	1	2	3	4	5
8	ปวดหัวจากความตึงเครียด	1	2	3	4	5
9	ปวดหลัง	1	2	3	4	5
10	ความอยากอาหารเปลี่ยนแปลง	1	2	3	4	5
11	ปวดศีรษะข้างเดียว	1	2	3	4	5
12	รู้สึกวิตกกังวล	1	2	3	4	5
13	รู้สึกคับข้องใจ	1	2	3	4	5
14	รู้สึกโกรธ หรือหงุดหงิด	1	2	3	4	5
15	รู้สึกเศร้า	1	2	3	4	5
16	ความจำไม่ดี	1	2	3	4	5
17	รู้สึกสับสน	1	2	3	4	5
18	ตั้งสมาธิลำบาก	1	2	3	4	5
19	รู้สึกเหนื่อยง่าย	1	2	3	4	5
20	เป็นหวัดบ่อยๆ	1	2	3	4	5
	รวม					

คะแนน 0-23 เครียดน้อย, 24-41 เครียดปานกลาง, 42-61 เครียดสูง, 62 ขึ้นไป เครียดรุนแรง

กรณีเครียดสูงและเครียดรุนแรง ส่งต่อศูนย์บริการสาธารณสุขเทศบาล

ส่วนที่ 4.2 แบบวัดด้วยตนเองเพื่อตรวจหาโรคซึมเศร้าในประชากรไทย (สำหรับผู้ดูแลที่ไม่เป็นผู้สูงอายุ)

<u>คำชี้แจง</u> กรณีที่ผู้ดูแลเป็นผู้สูงอายุให้ใช้แบบวัดความเศร้าในผู้สูงอายุของไทยในหน้าถัดไป

กรุณาเขียนเครื่องหมายวงกลมบนตัวเลขในตารางที่ตรงกับสุขภาพหรือความรู้สึกของคุณในช่วง 2 สัปดาห์นี้

บ่อยๆ   หมายถึง เกือบทุกวัน

ค่อนข้างบ่อย หมายถึง 2 ถึง 3 วันต่อสัปดาห์

บางครั้ง   หมายถึง น้อยกว่าสัปดาห์ละครั้ง

		บ่อยๆ	ค่อนข้างบ่อย	บางครั้ง	ไม่เลย
1.	รู้สึกเบื่ออาหาร	3	2	1	0
2.	นอนไม่หลับหรือต้องใช้ยาช่วยให้หลับ	3	2	1	0
3.	รู้สึกอ่อนเพลีย เหนื่อยง่าย	3	2	1	0
4.	คิดมาก กังวล	3	2	1	0
5.	รู้สึกสบายใจ	0	1	2	3
6.	รู้สึกเบื่อ ไม่อยากพูดคุย	3	2	1	0
7.	ใจลอย ไม่มีสมาธิ	3	2	1	0
8.	อยากอยู่เฉยๆ ไม่อยากทำอะไร	3	2	1	0
9.	รู้สึกเศร้า หดหู่ใจ	3	2	1	0
10.	ชีวิตอนาคตยังน่าอยู่ มีความหมาย	0	1	2	3
11.	ร้องไห้ หรืออยากร้องไห้	3	2	1	0
12.	ตัดสินใจไม่ได้แม้เรื่องเล็กๆน้อยๆ	3	2	1	0
13.	ชีวิตไม่มีความสุข	3	2	1	0
14.	รู้สึกเศร้าซึมเมื่อตื่นนอนตอนเช้า	3	2	1	0
15.	รู้สึกตัวเองมีคุณค่า	0	1	2	3
16.	ตำหนิหรือกล่าวโทษตนเอง	3	2	1	0
17.	เบื่อหน่ายเกือบทุกอย่างแม้ในสิ่งที่เคยชอบ	3	2	1	0
18.	คิดอยากตาย	3	2	1	0
19.	คนอื่นทักว่าคุณดูเครียด ซึมหรือหมองคล้ำ	3	2	1	0
20.	พยายามฆ่าตัวตาย	3	3	3	0
	รวม				

คะแนน 25 ขึ้นไป มีโอกาสมีภาวะ ซึมเศร้าหรือโรคทางจิตอย่างอื่นได้ หรือตอบข้อ 18, 20 ว่าบ่อยๆ แนะนำพบแพทย์

แบบวัดความเศร้าในผู้สูงอายุของไทย (สำหรับผู้ดูแลที่เป็นผู้สูงอายุ)

<u>คำชี้แจง</u> กรุณาเขียนเครื่องหมายวงกลมลงบนตัวเลขในตารางที่กำหนดให้อย่างชัดเจน

	ประเมินความรู้สึกของท่านในช่วงเวลา 1 สัปดาห์ที่ผ่านมา	ใช่	ไม่ใช่
1.	คุณพอใจกับชีวิตความเป็นอยู่ตอนนี้	0	1
2.	คุณไม่อยากทำในสิ่งที่เคยสนใจหรือเคยทำเป็นประจำ	1	0
3.	คุณรู้สึกว่าชีวิตของคุณช่วงนี้ว่างเปล่าไม่รู้จะทำอะไร	1	0
4.	คุณรู้สึกเบื่อหน่ายบ่อยๆ	1	0
5.	คุณหวังว่าจะมีสิ่งที่ดีเกิดขึ้นในวันหน้า	0	1
6.	คุณมีเรื่องกังวลอยู่ตลอดเวลา และเลิกคิดไม่ได้	1	0
7.	ส่วนใหญ่แล้วคุณรู้สึกอารมณ์ดี	0	1
8.	คุณรู้สึกกลัวว่าจะมีเรื่องไม่ดีเกิดขึ้นกับคุณ	1	0
9.	ส่วนใหญ่คุณรู้สึกมีความสุข	0	1
10.	บ่อยครั้งที่คุณรู้สึกไม่มีที่พึ่ง	1	0
11.	คุณรู้สึกกระวนกระวาย กระสับกระส่ายบ่อยๆ	1	0
12.	คุณชอบอยู่กับบ้านมากกว่าที่จะออกนอกบ้าน	1	0
13.	บ่อยครั้งที่คุณรู้สึกวิตกกังวลเกี่ยวกับชีวิตข้างหน้า	1	0
14.	คุณคิดว่าความจำของคุณไม่ดีเท่าคนอื่น	1	0
15.	การที่มีชีวิตอยู่ถึงปัจจุบันนี้ เป็นเรื่องน่ายินดีหรือไม่	0	1
16.	คุณรู้สึกหมดกำลังใจ หรือเศร้าใจบ่อยๆ	1	0
17.	คุณรู้สึกว่าชีวิตคุณค่อนข้างไม่มีคุณค่า	1	0
18.	คุณรู้สึกกังวลมากกับชีวิตที่ผ่านมา	1	0
19.	คุณรู้สึกว่าชีวิตนี้ยังมีเรื่องน่าสนุกอีกมาก	0	1
20.	คุณรู้สึกลำบากที่จะเริ่มต้นทำอะไรใหม่ๆ	1	0
21.	คุณรู้สึกกระตือรือร้น	0	1
22.	คุณรู้สึกสิ้นหวัง	1	0
23.	คุณคิดว่าคนอื่นดีกว่าคุณ	1	0
24.	คุณอารมณ์เสียง่ายกับเรื่องเล็กๆ น้อยๆ อยู่เสมอ	1	0
25.	คุณรู้สึกอยากร้องไห้บ่อยๆ	1	0
26.	คุณมีความตั้งใจในการทำสิ่งหนึ่งสิ่งใดได้ไม่นาน	1	0
27.	คุณรู้สึกสดชื่นในเวลาตื่นนอนตอนเช้า	0	1
28.	คุณไม่อยากพบปะพูดคุยกับคนอื่น	1	0
29.	คุณตัดสินใจอะไรได้เร็ว	0	1
30.	คุณมีจิตใจสบาย แจ่มใสเหมือนก่อน	0	1
	รวม		

คะแนนมากกว่า 12 แสดงว่าอาจมีภาวะซึมเศร้า ส่งต่อศูนย์บริการสาธารณสุขเทศบาล

ส่วนที่ 4.3 ข้อมูลทั่วไปของผู้ดูแลหลักของผู้สูงอายุ

1. เพศ   ชาย ☐   หญิง ☐

2. วันเดือนปีเกิด...

3. ศาสนา   พุทธ ☐   อิสลาม ☐   คริสต์ ☐   อื่นๆ......... ☐

4. ระดับการศึกษาสูงสุด

       ไม่ได้เรียนหนังสือ ☐   อนุปริญญา/ ปวส. หรือเทียบเท่า ☐

       ประถมต้น (ป.1 – ป.4) หรือเทียบเท่า ☐   ปริญญาตรี ☐

       ประถมปลาย (ป. 6) หรือเทียบเท่า ☐   สูงกว่าปริญญาตรี ☐

       มัธยมต้นหรือเทียบเท่า ☐   อื่นๆ (ระบุ).......................... ☐

       มัธยมปลาย/ ปวช. หรือเทียบเท่า ☐

5. สถานภาพสมรส   สมรส ☐   หม้าย ☐   โสด ☐   หย่า ☐

6. จำนวนพี่น้องที่ยังมีชีวิตอยู่ *(รวมผู้ดูแลหลักเองด้วย)*...................คน

    บุตรที่ยังมีชีวิตอยู่...................คน

7. ความสัมพันธ์กับผู้สูงอายุ

       คู่สมรส ☐   พี่น้อง ☐

       บุตร ☐   ญาติอื่นๆ เช่น ลูกพี่ลูกน้อง ☐

       บุตรเขย/ สะใภ้ ☐   อื่นๆ (ระบุ)............................. ☐

       บุตรของบุตร ☐

8. ผู้ดูแลผู้สูงอายุยังประกอบอาชีพอยู่หรือไม่

       ไม่ประกอบอาชีพ (ตอบข้อ 9, 10) ☐   ประกอบอาชีพ (ข้ามไปข้อ 11) ☐

9. เหตุผลสำคัญที่สุดที่ผู้ดูแลผู้สูงอายุไม่ได้ประกอบอาชีพ (ตอบเพียงข้อเดียว)

       ลาออกจากงานเพื่อมาดูแลผู้สูงอายุ ☐   ป่วย/พิการไม่สามารถทำงานได้ ☐

       ต้องทำหน้าที่แม่บ้าน/ ดูแลบ้าน ☐   ไม่สมัครใจทำงาน/ ตกงาน ☐

       ต้องดูแลบุคคลในครอบครัวคนอื่น ☐   เกษียณอายุ/ ชราภาพ ☐

       คู่สมรส/ บุตรไม่ให้ทำงาน ☐   อื่นๆ (ระบุ).......................... ☐

10. <u>เฉพาะกรณีที่ลาออกจากงานเพื่อมาดูแลผู้สูงอายุ</u> ผู้ดูแลผู้สูงอายุเคยมีรายได้จากการทำงานดังกล่าว

    ประมาณ.................................บาทต่อเดือน

11. อาชีพสุดท้ายหรืออาชีพปัจจุบันของผู้ดูแลสูงอายุคืออาชีพใด

       ไม่เคยประกอบอาชีพใด/ ทำงานบ้าน ☐   ลูกจ้างเอกชน ☐

       ค้าขาย/ ธุรกิจส่วนตัว/ ครัวเรือน ☐   เกษตรกรรม ☐

       ข้าราชการ/ ลูกจ้างรัฐบาล/ รัฐวิสาหกิจ ☐   อื่นๆ(ระบุ)............................. ☐

12. ผู้ดูแลผู้สูงอายุมีรายได้เป็นของตนเองหรือไม่ (ถ้ามี) ประมาณกี่บาทต่อเดือน

รายได้จากการประกอบอาชีพ...................................บาทต่อเดือน ☐

รายได้จากค่าเช่าต่างๆ...................................บาทต่อเดือน ☐

บำนาญ/กบข. ....บาทต่อเดือน ☐

เบี้ยยังชีพผู้สูงอายุ/ผู้พิการ/เงินสงเคราะห์ต่างๆ...................................บาทต่อเดือน ☐

อื่นๆ(ระบุ)................................... ....บาทต่อเดือน ☐

13. ผู้ดูแลผู้สูงอายุมีรายได้อื่นนอกจากรายได้ของตนเองหรือไม่ (ถ้ามี) ประมาณกี่บาทต่อเดือน

เงินที่ได้รับจากคู่สมรส...................................บาทต่อเดือน ☐

เงินที่ได้รับจากบุตรที่อยู่ในครัวเรือนเดียวกัน...................................บาทต่อเดือน ☐

เงินที่ได้รับจากบุตรที่อยู่ที่อื่น...................................บาทต่อเดือน ☐

อื่นๆ (ระบุ) ....บาทต่อเดือน ☐

14. รายได้ของผู้ดูแลสูงอายุมีเพียงพอกับรายจ่ายหรือไม่   เพียงพอ ☐   ไม่เพียงพอ ☐

15. ผู้ดูแลผู้สูงอายุมีหนี้สินหรือไม่   มีหนี้สิน ☐   ไม่มีหนี้สิน ☐

สิ้นสุดการสัมภาษณ์

APPENDIX B

TRANSLATED INTERVIEW QUESTIONNAIRE

The original version of interview questionnaire was Thai version; therefore, it was translated in this section for better understanding of international readers. However, this English version was done briefly and could not be used as reference.

Section 1: Health Status

Section 1.1: General Health Status

1. Underlying diseases

Hypertension	☐
Diabetes Mellitus	☐
Dyslipidemia	☐
Osteoarthritis	☐
Spondylosis	☐
Other Musculoskeletal Disease (Specified)	☐
Cataract	☐
Other Eye Disease (Specified)	☐
Stroke	☐
Ischemic Heart Disease	☐
Dementia Or Alzheimer's Disease	☐
Other Brain Disease (Specified)	☐
Other Mental Disease (Specified)	☐
Cancer (Specified)	☐
Kidney Or Urinary Tract Disease (Specified)	☐
Lung Disease (Specified)	☐
Liver Disease (Specified)	☐
Gastrointestinal Disease (Specified)	☐
Other Disease (Specified)	☐

2. Vision

good without glasses ☐

good with glasses ☐

bad ☐

blind ☐

3. Hearing

good without hearing aids ☐

good with hearing aids ☐

bad ☐

deaf ☐

4. Chewing

good without false teeth ☐

good with false teeth ☐

bad ☐

unable ☐

5. Outpatient department visits per year

more than 5 times per year ☐

not more than 5 times per year ☐

6. Hospitalization in the past year

no (skip to section 1.2) ☐

yes ☐

7. Hospitalization in the past year …………. times, last hospitalization in the past ……..
month(s), cause/diagnosis (specify) ……………………………………………………………

Section 1.2: Activity of Daily Living

	Item	Unable to perform task	Substantial help required	Moderate help provided	Minimal help required	Fully independent
1	Personal hygiene	0	1	2	3	4
2	Bathing self	0	1	2	3	4
3	Feeding	0	1	2	3	4
4	Toilet	0	1	2	3	4
5	Stair climbing	0	1	2	3	4
6	Dressing	0	1	2	3	4
7	Bowel control	0	1	2	3	4
8	Bladder control	0	1	2	3	4
9	Ambulation/ Wheel chair	0	1	2	3	4
10	Chair/Bed transfer	0	1	2	3	4

Section 1.3: Dementia Screening

	Question/ Order	Answer/ Correct Action	Subject's Answer/ Act	
			Correct	Incorrect
1	How old are you?	= 2554 – (birth year)	1	0
2	What time is it?	Look at the clock/ watch	1	0
3	Say "Umbrella Pan Door (in Thai words)" 2 times and ask the subject to repeat	Umbrella	1	0
		Pan	1	0
		Door	1	0
4	What month is it?		1	0
5	Who are they? (Point at family members or other interviewers)	First person	1	0
		Second person		
6	How many liters or kilograms are there in 1 pail of rice (Thai unit)?	20 liters or 15 kilograms	1	0
7	Ask the subject to do this: "Clap your hands 3 times and fold your arms across your chest"	Do exactly as asked	1	0
8	Meaning of this proverb: "Run away from a tiger, meet a crocodile (Thai proverb)"	Run away from a bad situation then meet another bad situation or even worse	1	0
9	Listen carefully and repeat: "I like music, flower but don't like dog (in Thai words)"	Repeat the whole sentence correctly	1	0
10	What would you do if you forgot the house key inside?	Reasonable, possible answer without excessive damage	1	0
11	Count from 10 to 20	Correct counting	1	0
12	Point at the "clock" and ask "what is this?" Point at the "pen" and ask "what is this?"	Clock	1	0
		Pen		
13	Ask the subject to subtract 3 from 20 for 3 times (20-3=17, 17-3=14, 14-3=11)	Correct first subtraction	1	0
		Correct second subtraction	1	0
		Correct third subtraction	1	0
		Total		

Score lower than 15 means abnormal; refer the patient to the public health center.

Section 1.4: Depression Screening in Elderly

Assess your feeling in the past week	Yes	No
1. Are you basically satisfied with your life?	0	1
2. Have you dropped many of your activities and interests?	1	0
3. Do you feel that your life is empty?	1	0
4. Do you often get bored?	1	0
5. Are you hopeful about the future?	0	1
6. Are you bothered by thoughts you can t get out of your head?	1	0
7. Are you in good spirits most of the time?	0	1
8. Are you afraid that something bad is going to happen to you?	1	0
9. Do you feel happy most of the time?	0	1
10. Do you often feel helpless?	1	0
11. Do you often get restless and fidgety?	1	0
12. Do you prefer to stay at home, rather than going out and doing new things?	1	0
13. Do you frequently worry about the future?	1	0
14. Do you feel you have more problems with memory than most?	1	0
15. Do you think it is wonderful to be alive now?	0	1
16. Do you often feel downhearted and blue?	1	0
17. Do you feel pretty worthless the way you are now?	1	0
18. Do you worry a lot about the past?	1	0
19. Do you find life very exciting?	0	1
20. Is it hard for you to get started on new projects?	1	0
21. Do you feel full of energy?	0	1
22. Do you feel that your situation is hopeless?	1	0
23. Do you think that most people are better off than you are?	1	0
24. Do you frequently get upset over little things?	1	0
25. Do you frequently feel like crying?	1	0
26. Do you have trouble concentrating?	1	0
27. Do you enjoy getting up in the morning?	0	1
28. Do you prefer to avoid social gatherings?	1	0
29. Is it easy for you to make decisions?	0	1
30. Is your mind as clear as it used to be?	0	1
Total		

Score more than 12 means depressed; refer the patient to the public health center.

Section 2: Long-Term Care

Section 2.1: Informal Long-Term Care

1. Does the elderly feel the need for assistance in activities of daily living?

No (skip to section 2.2) ☐   Yes and have caregiver(s) ☐

Yes but do not want to be taken care ☐

Yes but do not have available relative ☐

Yes but no relative ☐

Other (specify)……………………….. ☐

2. Does the elderly have any main caregiver? (Main caregiver means the caregiver who take care of the elderly for most of the time each day, not including the sleep hours)

No caregiver at all (skip to section 2.2) ☐

Multiple caregivers without main caregiver (skip to section 2.2) ☐

Yes, only one main caregiver (proceed to number 3.) ☐

3. Does the main caregiver live in the same house?

Yes ☐

Live in another house nearby ☐

Live further away but travel to the elderly's house ☐

4. The main caregiver has taken care of the elderly for …… year (s) …… month (s) and takes …… hour (s) a day in care giving.

5. How much does the elderly satisfy with the care?

Very satisfy ☐ Rather satisfy ☐ Neutral ☐ Rather unsatisfy ☐ Very unsatisfy ☐

6. If the main caregiver was not available, what would be the alternatives for care giving in these situations? (Choose one from each situation)

Alternatives	Daytime	Several days
Leave the elderly alone	☐	☐
Let other member(s) in the house take turn	☐	☐
Let other relatives living in other house take turn	☐	☐
Leave the elderly with neighbor (s)	☐	☐
Hire someone to take care of elderly	☐	☐
Take the elderly to other relative's house	☐	☐
Take the elderly to daycare service center	☐	☐
Other (specify) ……………………………………	☐	☐

Section 2.2: Formal Long-Term Care

Formal long-term care for elderly means dependent elderly care service which you have to pay the service charge.

1. Have you ever known or experienced using these types of formal long-term care for elderly?

Type of Long-term care (Allow multiple answers)	Knowledge		Experience*	
	Know	Don't Know	Yes	No
1. Long-term hospital care	☐	☐	☐	☐
2. Nursing home	☐	☐	☐	☐
3. Private residential home	☐	☐	☐	☐
4. Public residential home or home for destitute elderly	☐	☐	☐	☐
5. Retirement home (elderly can hire-purchase for 30 years and live permanently without ownership)	☐	☐	☐	☐
6. Home care agency	☐	☐	☐	☐
7. Other (specify) ………………………………….	☐	☐	☐	☐

* If any answer is yes, proceed to number 2. If all answers are no, skip to number 5.

2. Is the elderly currently using formal long-term care in number 1?

Yes (proceed to number 3) ☐

Stop using for less than 1 year (proceed to number 3) ☐

Stop using for more than 1 year (skip to number 4) ☐

3. Type, period and the service charge of formal long-term care used or using

Type of Long-term care (Choose one answer for the most recent type)	Used or Using	Period		Service Charge (Baht/month)
		All day	Day time	
1. Long-term hospital care	☐	☐	☐	………………
2. Nursing home	☐	☐	☐	………………
3. Private residential home	☐	☐	☐	………………
4. Public residential home or home for destitute elderly	☐	☐	☐	………………
5. Retirement home (elderly can hire-purchase for 30 years and live permanently without ownership)	☐	☐	☐	………………
6. Home care agency	☐	☐	☐	………………
7. Other (specify) ………………………………….	☐	☐	☐	………………

4. The most important reason of termination of formal long-term care

No longer needed ☐   Expensive ☐   Poor quality service ☐

Other (specify) ………………………………………………………….. ☐

5. This question is asked without intention to offer or persuade the elderly to buy any service, or obligate the elderly with the commitment to do so. This question is asked only because of the intention to find out the average costs for elderly long-term care services of households in the Municipality of Muang District.

If there was the need for formal long-term care for elderly, would you choose to use these types of services?

Absolutely	means	chance to use the service is 100 percent
Possibly	means	chance to use the service is 70-80 percent
Maybe	means	chance to use the service is 50 percent
Unlikely	means	chance to use the service is 20-30 percent
Not at all	means	chance to use the service is 0 percent

#	Place	Caregiver	Period	Charge per month (baht)	Chance of using the service				
					Absolutely	Possibly	Maybe	Unlikely	Not at all
1				24,000	100	70-80	50	20-30	0
2				22,000	100	70-80	50	20-30	0
3	Nursing home	Nurse	All day	20,000	100	70-80	50	20-30	0
4				18,000	100	70-80	50	20-30	0
5				16,000	100	70-80	50	20-30	0
6				7,200	100	70-80	50	20-30	0
7				6,600	100	70-80	50	20-30	0
8	Public residential home	Paid worker	All day	6,000	100	70-80	50	20-30	0
9				5,400	100	70-80	50	20-30	0
10				4,800	100	70-80	50	20-30	0
11				14,400	100	70-80	50	20-30	0
12				13,200	100	70-80	50	20-30	0
13	Private residential home	Paid worker	All day	12,000	100	70-80	50	20-30	0
14				10,800	100	70-80	50	20-30	0
15				9,600	100	70-80	50	20-30	0

#	Place	Caregiver	Period	Charge per month (baht)	Chance of using the service				
					Absolutely	Possibly	Maybe	Unlikely	Not at all
16	Private residential home	Paid worker	Daytime	18,000	100	70-80	50	20-30	0
17				16,500	100	70-80	50	20-30	0
18				15,000	100	70-80	50	20-30	0
19				13,500	100	70-80	50	20-30	0
20				12,000	100	70-80	50	20-30	0
21	Home for destitute elderly	Paid worker	All day	0	100	70-80	50	20-30	0
22	Home for destitute elderly	Paid worker	Daytime	0	100	70-80	50	20-30	0
23	Home	Trained worker	All day	9,000	100	70-80	50	20-30	0
24				8,250	100	70-80	50	20-30	0
25				7,500	100	70-80	50	20-30	0
26				6,750	100	70-80	50	20-30	0
27				6,000	100	70-80	50	20-30	0
28	Home	Trained worker	Daytime	12,000	100	70-80	50	20-30	0
29				11,000	100	70-80	50	20-30	0
30				10,000	100	70-80	50	20-30	0
31				9,000	100	70-80	50	20-30	0
32				8,000	100	70-80	50	20-30	0

Section 3: General Information

House number………Community……………….Road…………..Subdistrict……………

1. Interviewee

The elderly himself/herself (proceed to number 3) ☐

Main related caregiver (living in the same house) ☐

Main related caregiver (living in the different house) ☐

Relative or member in the household, not the main caregiver ☐

Other (specify) ……………………………………………... ☐

2. Reason for answering the questions instead of the elderly

The elderly is away ☐

The elderly is sick/needs to rest ☐

The elderly is unable to communicate ☐

The elderly has mental or psychiatric disease ☐

Other (specify) …………………………….. ☐

3. Sex　　　　　　　　　　　　　　　　　　Male ☐　　　　Female ☐

4. Birth date…………………………………..

5. Religion　　Buddhism ☐　　　　Islam ☐　　　　Christ ☐　　Other……. ☐

6. Education

No formal education ☐　　　　　High certificate ☐

Early primary school ☐　　　　　Bachelor's degree ☐

Late primary school ☐　　Higher than Bachelor's degree ☐

Junior high school ☐　　　Other (specify)………………. ☐

High school/ certificate ☐

7. Marital status　　Married ☐　　　Widowed ☐　　　Single ☐　　Divorced ☐

8. Numbers of living siblings (including the elderly)……..Numbers of living

children…….

9. Numbers of household members………(multiple answers allowed/ specify numbers)

Living alone ☐　　　　　Grandchildren…….. ☐

Spouse ☐　　　　　Parents…….. ☐

Son…….. ☐　　　　　Siblings…….. ☐

Daughter…….. ☐　　　Other relative…….. ☐

Son-in-law…….. ☐　　Other (specify)…………. …….. ☐

Daugher-in-law…….. ☐

10. Does the elderly have any relative living in the following status? (Multiple answers allowed and specify the numbers of relatives)

Children living nearby........ ☐   Siblings living nearby........ ☐

Children living in the same province......... ☐   Relatives living nearby........ ☐

Children living in other province........ ☐   Trusted neighbors........ ☐

Children living in other country........ ☐

11. Who is the owner of the house that the elderly is living in?

The elderly himself/herself ☐   Grandchildren........ ☐

Spouse ☐   Parents........ ☐

Children ☐   Siblings........ ☐

Son- or Daughter-in-law ☐   Other relative (specify)........ ☐

12. Does the elderly have a job?   No ☐   Yes ☐

13. What is the current or last job that the elderly work as?

None/ Housework ☐   Private employee ☐

Merchant/ Personal or household business ☐   Agriculture ☐

Government or state enterprise officer ☐   Other (specify)................. ☐

14. Does the elderly have his or her own income? If yes, please specify the amount.

Income from work....................baht per month ☐

Income from rent....................baht per month ☐

Pension....................baht per month ☐

Allowance for elderly/ disabled....................baht per month ☐

Other (specify) ....baht per month ☐

15. Does the elderly receive money from other source? If yes, please specify the amount.

From spouse....................baht per month ☐

From children living together....................baht per month ☐

From children living somewhere else....................baht per month ☐

Other (specify) ....baht per month ☐

16. Is the total income sufficient?   Yes ☐   No ☐

17. Does the elderly have any debt?   Yes ☐   No ☐

Section 4: Caregiver burden (only main caregiver)

Section 4.1: Suanprung Stress Test – 20

In the past 6 months, did you experience any of these situations? If not, skip that question.

If yes, assess your feeling and rate according to the followings:

> Stress score 1 means do not feel stressful
>
> Stress score 2 means feel slightly stressful
>
> Stress score 3 means feel moderately stressful
>
> Stress score 4 means feel very stressful
>
> Stress score 5 means feel extremely stressful

No.	In the past 6 months	Stress Score				
		1	2	3	4	5
1	Fear of making mistake	1	2	3	4	5
2	Cannot reach the target	1	2	3	4	5
3	Family conflict regarding money or house chores	1	2	3	4	5
4	Anxious about pollution in the air, water, noise and earth	1	2	3	4	5
5	Feel the need of competition or comparation	1	2	3	4	5
6	Insufficient money for expense	1	2	3	4	5
7	Muscle strain or pain	1	2	3	4	5
8	Tension headache	1	2	3	4	5
9	Back pain	1	2	3	4	5
10	Change in appetite	1	2	3	4	5
11	Unilateral headache	1	2	3	4	5
12	Feel anxious	1	2	3	4	5
13	Feel upset	1	2	3	4	5
14	Feel angry or irritable	1	2	3	4	5
15	Feel depressed	1	2	3	4	5
16	Poor memory	1	2	3	4	5
17	Feel confused	1	2	3	4	5
18	Feel distracted	1	2	3	4	5
19	Feel easily tired	1	2	3	4	5
20	Frequently get a common cold	1	2	3	4	5
	Total					

Score 0-23 mild stress, 24-41 moderate stress, 42-61 high stress, >62 severe stress

In case of high or severe stress, refer to public health center.

Section 4.2: Depression Screening

General Population (for adult caregiver)

Rate your health or feeling in the past 2 weeks

Frequently   means almost everyday

Rather frequently   means 2-3 days per week

Sometimes   means less than once a week

		Frequently	Rather frequently	Sometimes	Never
1	Feel poor appetite	3	2	1	0
2	Cannot sleep or take sleep pill	3	2	1	0
3	Feel malaise, easily tired	3	2	1	0
4	Think too hard, anxious	3	2	1	0
5	Feel pleasure	0	1	2	3
6	Feel bored, avoid conversation	3	2	1	0
7	Inattentive, distracted	3	2	1	0
8	Do not want to do anything	3	2	1	0
9	Feel depressed	3	2	1	0
10	Future life is pleasant and meaningful	0	1	2	3
11	Cry or want to cry	3	2	1	0
12	Indecisive about even minor things	3	2	1	0
13	Life has no happiness	3	2	1	0
14	Feel depressed after wake up in morning	3	2	1	0
15	Feel valuable about yourself	0	1	2	3
16	Blame or accuse yourself	3	2	1	0
17	Easily bored of even the favorite things	3	2	1	0
18	Have a death wish	3	2	1	0
19	Other people said you are stressful or gloomy	3	2	1	0
20	Try to suicide	3	3	3	0
	Total				

Score > 25 may be depressed or have other mental illness or answer frequently in number 18 and 20 refer to the doctor

Depression Screening in Elderly (for the caregiver who is an elderly)

Assess your feeling in the past week	Yes	No
1. Are you basically satisfied with your life?	0	1
2. Have you dropped many of your activities and interests?	1	0
3. Do you feel that your life is empty?	1	0
4. Do you often get bored?	1	0
5. Are you hopeful about the future?	0	1
6. Are you bothered by thoughts you can t get out of your head?	1	0
7. Are you in good spirits most of the time?	0	1
8. Are you afraid that something bad is going to happen to you?	1	0
9. Do you feel happy most of the time?	0	1
10. Do you often feel helpless?	1	0
11. Do you often get restless and fidgety?	1	0
12. Do you prefer to stay at home, rather than going out and doing new things?	1	0
13. Do you frequently worry about the future?	1	0
14. Do you feel you have more problems with memory than most?	1	0
15. Do you think it is wonderful to be alive now?	0	1
16. Do you often feel downhearted and blue?	1	0
17. Do you feel pretty worthless the way you are now?	1	0
18. Do you worry a lot about the past?	1	0
19. Do you find life very exciting?	0	1
20. Is it hard for you to get started on new projects?	1	0
21. Do you feel full of energy?	0	1
22. Do you feel that your situation is hopeless?	1	0
23. Do you think that most people are better off than you are?	1	0
24. Do you frequently get upset over little things?	1	0
25. Do you frequently feel like crying?	1	0
26. Do you have trouble concentrating?	1	0
27. Do you enjoy getting up in the morning?	0	1
28. Do you prefer to avoid social gatherings?	1	0
29. Is it easy for you to make decisions?	0	1
30. Is your mind as clear as it used to be?	0	1
Total		

Score more than 12 means depressed; refer the patient to the public health center.

Section 4.3: General Information of Caregiver

1. Sex   Male ☐   Female ☐

2. Birth date…………………………………..

3. Religion   Buddhism ☐   Islam ☐   Christ ☐   Other……. ☐

4. Education

No formal education ☐	High certificate ☐
Early primary school ☐	Bachelor's degree ☐
Late primary school ☐	Higher than Bachelor's degree ☐
Junior high school ☐	Other (specify)……………….. ☐
High school/ certificate ☐	

5. Marital status   Married ☐   Widowed ☐   Single ☐   Divorced ☐

6. Numbers of living siblings (including the caregiver)……..

    Numbers of living children…….

7. Relationship with the elderly

Spouse ☐	Siblings ☐
Child ☐	Other relative e.g. cousin ☐
Son-in-law/ Daugher-in-law ☐	Other (specify)…….…….. ☐
Grandchild ☐	

8 Does the caregiver have a job?

          No (proceed to number 9, 10) ☐   Yes (skip to number 11) ☐

9. The most important reason that the caregiver does not have a job (only one answer).

Quit the job to take care of the elderly ☐	Ill or disabled ☐
Had to take care of house chores ☐	Unwilling to work/ unemployed ☐
Had to take care of other member(s) ☐	Retired ☐
Spouse or children asked to quit ☐	Other (specify)……..…….. ☐

10. <u>If the main caregiver quit the job to take care of the elderly</u>, the caregiver used to have income about…………………….baht per month.

11. What is the current or last job that the caregiver works as?

None/ Housework ☐	Private employee ☐
Merchant/ Personal or household business ☐	Agriculture ☐
Government or state enterprise officer ☐	Other (specify)…………….. ☐

12. Does the caregiver have his or her own income? If yes, please specify the amount.

Income from work…………………baht per month ☐

Income from rent…………………baht per month ☐

Pension…………………baht per month ☐

Allowance for elderly/ disabled…………………baht per month ☐

Other (specify) …………………. …………………baht per month ☐

15. Does the caregiver receive money from other source? If yes, please specify the amount.

From spouse…………………baht per month ☐

From children living together…………………baht per month ☐

From children living somewhere else…………………baht per month ☐

Other (specify) …………………. …………………baht per month ☐

16. Is the total income sufficient?   Yes ☐   No ☐

17. Does the caregiver have any debt?   Yes ☐   No ☐

End of the interview

BIOGRAPHY

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