# The System of Primary Health Care Services for the Elderly in Maha Sarakham Municipality ระบบบริการสุขภาพระดับปฐมภูมิสำหรับผู้สูงอายุในเขตเทศบาลเมืองมหาสารคาม

Rutchanun Srisupak and Prapakorn Srisawangwong รัชชานันท์ ศรีสุภักดิ์ และประภากร ศรีสว่างวงศ์

Faculty of Science and Technology, Rajabhat Maha Sarakham University คณะวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยราชภัฏมหาสารคาม

#### **Abstract**

The research objectives were to study; (1) knowledge level of the elderly on primary health care services. (2) problems and requirements of primary health care services for the elderly. (3) problems of the system of primary health care services for the elderly. There were two stages of study. The first stage used questionnaire in survey research for data collection of 260 elderly from a population of 3,332 elderly in Maha Sarakham Municipality. The second stage used focus group discussion with 8 elderly using primary care services to investigate the problems of primary health care services for the elderly in Maha Sarakham Municipality. The results revealed that the most of elderly were female (72.70 %), age between 60-69 years old (51.10 %), respected Buddhism 100.00 %, were married (53.9 lived in their own homes (100.00 %), had primary education level (71.30 %), were unemployed (41.10 %), had incomes of less than 600 Baht per month (87.60 %), had family member of less than 5 persons (74.40 %), received the elderly care allowances (84.60 %), had social attachment (67.00 %), had annual health checkups (84.60 %) had chronic sickness (58.40 %) respectively. Their knowledge on primary health care services in holistic view was at high level with mean scores of 8.94 (S.D. =1.48). However, regarding the problems and requirements in receiving primary health care services, it was found that the elderly who had congenital disease health problems and who had not enough income, were very worried about the health fees and inconvenience to get service. For better health and long life, they required regular health care as well as love and care from their children. Moreover, they wanted to participate in community activities. The second stage, results from the focus group discussion, the problems of primary health care services included the irregular working system of primary health care services, lacked of good public relation, and lacked of community participation, no evaluation system and budget insufficiencies.

Keywords: primary health care services, elderly, Maha Sarakham Municipality

# บทคัดย่อ

วัตถุประสงค์การวิจัยครั้งนี้ คือ (1) เพื่อศึกษาระดับความรู้ของผู้สูงอายูเกี่ยวกับการบริการสุขภาพระดับปฐมภูมิ สำหรับผู้สูงอายุ (2) ศึกษาปัญหาและความต้องการในการบริการสุขภาพระดับปฐมภูมิของผู้สูงอายุ (3) ศึกษาสภาพ และปัญหา การบริการสุขภาพระดับปฐมภูมิ โดยกลุ่มตัวอย่างเป็นผู้สูงอายุในเขตเทศบาลเมืองมหาสารคาม การวิจัย ครั้งนี้แบ่งการวิจัยออกเป็น 2 ระยะ คือระยะที่ 1 เพื่อตอบวัตถุประสงค์ข้อที่ 1 และ 2 เป็นการวิจัยการวิจัยเชิงสำรวจที่ใช้ แบบสอบถามเป็นเครื่องมือในการรวบรวมข้อมูลจากกลุ่มตัวอย่างผู้สูงอายุจำนวน 260 คนจากประชากรผู้สูงอายุจำนวน 3,332 คน ในเขตเทศบาลเมืองมหาสารคามโดยวิธีการสุ่มแบบสัดส่วนและการสุ่มแบบเป็นระบบ และ ระยะที่ 2 ศึกษา สภาพและปัญหา การบริการสุขภาพระดับปฐมภูมิสำหรับผู้สุงอายุในเขตเทศบาลเมืองมหาสารคาม ใช้การสนทนากลุ่ม ผู้ใช้บริการด้านปฐมภูมิจำนวน 8 คน โดยการสุ่มแบบเฉพาะเจาะจงและใช้การวิเคราะห์การสรุปประเด็น ผลการศึกษา ระยะที่ 1 ข้อมูลทั่วไป พบว่า ผู้สูงอายุส่วนใหญ่เป็นเพศหญิง คิดเป็นร้อยละ 72.7 มีอายุระหว่าง 60-69 ปี คิดเป็นร้อยละ 51.1 มีสถานภาพคู่ คิดเป็นร้อยละ 53.9 และพักอาศัยที่พักเป็นของตนเอง การศึกษาในระดับประถมศึกษา คิดเป็นร้อยละ 71.3 ไม่ได้ทำงาน คิดเป็นร้อยละ 41.1 มีรายได้ต่อเดือนมากกว่า 600 บาทต่อเดือน คิดเป็นร้อยละ 87.6 จำนวนสมาชิก ในครอบครัวมีน้อยกว่า 5 คน คิดเป็นร้อยละ 74.4 และ ได้รับเบี้ยผู้สูงอายุ คิดเป็นร้อยละ 84.6 ผู้สูงอายุที่ติดสังคมคิดเป็น ร้อยละ 67.0 มีการตรวจสุขภาพประจำปี คิดเป็นร้อยละ 84.6 และมีโรคประจำตัว คิดเป็นร้อยละ 58.4 ผู้สูงอายุมีความรู้ ้ เกี่ยวกับการบริการปฐมภูมิในภาพรวมอยู่ในระดับสูงโดยมีคะแนนเฉลี่ยเท่ากับ 8.94 (S.D. =1.48) ด้านปัญหาต่อการรับ บริการสุขภาพระดับปฐมภูมิ พบว่า ผู้สูงอายุที่มีปัญหาสุขภาพจากการเจ็บป่วยด้วยโรคประจำตัวและไม่มีรายได้ทำให้ ้วิตกกังวลในเรื่องค่ารักษาพยาบาลและมีความไม่สะควกในการไปรับบริการ ประเด็นความต้องการการรับบริการสุขภาพ ระดับปฐมภูมิ พบว่า ผู้สูงอายุต้องการมีสุขภาพแข็งแรงมีอายุยืนยาว ได้รับการดูแลอย่างสม่ำเสมอ ต้องการได้ความรัก เอาใจใส่ จากลูกหลาน รวมถึงผู้สูงอายุต้องการมีส่วนร่วมในการทำกิจกรรมในชุมชน ระยะที่ 2 จากการสนทนากลุ่ม ผู้ใช้บริการปฐมภูมิ พบว่า เกิดปัญหาจากการระบบการทำงานที่ไม่ต่อเนื่องเกิดจากการขาดการประชาสัมพันธ์ และ ขาดการมีส่วนร่วมในชุมชน เนื่องจากเป็นกิจกรรมที่เกิดจากผู้ให้บริการเป็นหลัก และขาดระบบประเมินผล งบประมาณ ในการคำเนินงานไม่เพียงพอต่อกิจกรรมทำให้ไม่สามารถตอบสนองความต้องการของผู้สูงอายุในชุมชมได้

คำสำคัญ: ระบบบริการสุขภาพระดับปฐมภูมิ, ผู้สูงอายุ, เขตเทศบาลเมืองมหาสารคาม



#### Introduction

The age structure of global population in all regions was reshaped since the expansion of life expectancy is longer that has caused the demographic transition progression. This makes the changing relative load from younger to elderly groups. Nevertheless, the realistic condition of care within the family developed into nuclear family because of the family size decreasing. Conventionally, the majority of women are the caregivers and they were employees outside the home gradually. Whereas a large number of people live longer after retirement but pensions and other social assistances are

decreased because it takes long periods of time to take care the elderly. The social security systems are required to extensively alter in order to successfully maintain the assistance for older people (Bloom, et al., 2003a; Creedy, 1998; Lesthaeghe, 2010). The 80-and-over age group is growing faster than any other in different region of the world. This is anticipated to persist as the greatest growing section of the population for at least the next 50 years. The medical costs and requirements for health services are unavailable increased due to the Increasing longevity because older people are usually more vulnerable to chronic diseases. Principally, health conditions naturally

decline with progress age. The recommendations was made on speeding up in the requirement for long-term care, thus it wants the public policy and plan for elderly (Crimmins, 1997; de Jong-Gierveld & van Solinge, 1995; Holliday, 1999; Pollard, 1995).

Even though older group is a small section of the total global population but its amounts are increasingly significant, particularly in the less developed regions. Increased age generally carries extensive alteration in individual requirements. In 1999, Population Division of United Nations informed there were 600 millions people who are 60 years old up over the world. It is about 1 in 10 global population and 53 percent of elderly or the most were in Asia. Subsequence was in Europe with 25 percent. The proportion of older persons is predictable to more than twice worldwide over the next half century. As the older population has grown faster than the total population, the proportion of older persons relative to the rest of the population, has increased noticeably. At the global level, 1 in every 12 individuals was at least 60 years of age in 1950, and 1 in every 20 was at least 65 years. By the year 2000, those ratios had increased to 1 in every 10 aged 60 years or older and 1 in every 14 aged 65 or older. By the year 2050, there will be about 2 billions elderly peoples or more than 1 in every 5 persons throughout the world is projected to be aged 60 or over, while nearly 1 in every 6 is projected to be at least 65 years old (Population Division of United Nations, 1999).

Thai elderly peoples are the similar tend with the world elderly persons that the older person will increase from 10 percent in 2000 to be 15 percent in 2025, consequently Thai will go through to aging society in the future (Population Division, Department of Economic and Social Affairs (DESA), United Nations, 2001; Office of National Statistic, 2012; Maranet, 2012).

Asia has population up to 60 percent of global population. China is country that has the mainly population and subsequence is India. Thailand is nineteenth country

that had 60 millions in 1996 and it is anticipated that Thai population will be 70 millions in 2019 and the older persons will be 14.75 percent. This signifies that in the future Thailand will have older people more than children population; therefore Thailand should have the social and economic plan to support social system in the future (Ratanatikul, et al., 2012; Pusdorn, et al., 2013).

Primary health care service for elderly is a family and community security with long planning to ensure the good quality of life for all elderly people. This is an essential issue that must be paid attention. Primary health care service unit is the first place that the elderly is closely accessible because it located nearby the community. It provides service that emphasizes on disease prevention and chronic diseases care for family level and community level by caring with primary health care and after sick in all of physical, mental, social and spiritual aspects. It is a care of patient-centered more than disease-centered. Moreover, it is an integrated service of the essential and successive services so it is a care service but not cure service (Ministry of Public Health, 2007).

Primary health care service unit is related to elderly and it is a place that located in local area and easily access. Additionally, it also provides the recommendations for disease prevention and primary care for elderly. It is obviously seen that most of elderly uses its service more than other health services because it decreases the cost of transportation and time consumption. The elderly is able to go by himself/herself (Ministry of Public Health, 2007; Pusdorn, et al., 2013).

Maha Sarakham province is a province in Northeastern region of Thailand. The governmental area is divided into 13 districts, 133 sub-districts, 1804 villages and covers with 5,291.683 kilometer squares. The information from Center of Information Technology for Department of Provincial Administration, Ministry of Inferior at B.E. 2554, it was found that Maha Sarakham Province has total population of 939,736 persons with

density of 177.59 persons/ kilometer squares and it was accounted as the fifteen of Thailand by population. There were 92,457 elderly peoples or 10 percent of total population and elderly with chronic disease were 22,574 peoples and with disability of 1,528 peoples. This is an indicator that implies to the change of population structure in the future of Maha Sarakham Province that enters to elderly society evidently. However, Maha Sarakham Province presently faces with the problem of health service seriously, particularly, in the Maha Sarakham municipality due to health service with small sizes and less amount. It is interesting to study situation of problem of the system of primary health care services for the elderly in Maha Sarakham Municipality. In order to be a guideline, it needs to study and to be a body of knowledge to develop the system of primary health care services for the elderly and general people in Maha Sarakham Municipality including to be a guideline for prevention for health problem.

# **Research Objective**

The research objectives were to study requirements and knowledge of the elderly on primary health care services in Maha Sarakham municipality, and to study problems of primary health care services for the elderly in Maha Sarakham municipality.

#### Methodology

The research method was conducted as the followings:

# Population and Sample

The first stage was survey research and population were 3,332 elderly peoples in Maha Sarakham municipality (Maha Sarakham municipality, 2013). The finite sample size formula was used to calculate sample size. The proportional and systematic random sampling was

conducted to collect the sample of 260 elderly peoples (Yamane, 1973).

The second stage was focus group discussion. The purposive sampling was used to select target group of 8 elderly peoples to investigate the problems of primary health care services for the elderly in Maha Sarakham municipality (Thiengkamol, 2011a).

#### Research Tool

The first stage, the content and structural validity of questionnaire were proved by Item Objective Congruent (IOC) from 3 experts. The reliability was tried out by conducting with the sample group from 30 elderly peoples in Kalasin municipality that had the same characteristics like as sample group. The item selected to use had IOC more than 0.50 (Rovinelli & Hambleton, 1977). The reliability was determined by Cronbach's Alpha formula (Cronbach, 1951). The questionnaire contained 3 sections of as following: 1) demographic characteristics of sex, age, religion, marital status, education level, resident, number r of family member, occupation, income, receiving elderly care allowances, elderly group, and annual physical check up with 13 items. 2) knowledge of the elderly on primary health care services with 10 items, and 3) problem and requirements of the elderly on primary health care services with open ended. Its reliability was 0.86 (Cronbach, 1951).

The second stage, the tools for qualitative research of focus group discussion with elderly were tape recorder, video tape and observation form.

#### **Data Collection**

The proportional and systematic random sampling was used for data collection of 260 elderly from different communities of Maha Sarakham municipality with confident interval at 0.05. The questionnaire was employed as research tool and it was used for data collection in the first stage.

## **Data Analysis**

The descriptive statistics were frequency, percentage, mean and standard deviation.

#### Results

# 1. Results of the First Stage Research

The results was revealed that, the general information was revealed that most of elderly was female with 72.7 percent with age between 60-69 years old with 51.1 percent, they pray respect to Buddhism with 100 percent, the marital status with couple was 53.9 percent, living in their own houses with 100.0 percent, primary

education level with 71.3 percent, they had no work with 41.1 percent, their incomes were more than 600 baht per month with 87.6 percent, and received the elderly with 84.6 percent, annual health check up with 84.6 percent and sickness with 58.4 percent. Their knowledge on primary health care services in holistic view was at high level with mean scores of 8.94 (S.D. =1.48). However, the requirements in receiving primary health care services, it was found that the elderly had health problem of and had not enough income, therefore, it made them be worry for health fee and inconvenience to get service. They required for better health and long live with regular health care, love and from their descendants.

**Table 1**Demographic Characteristics of Sample Group

<b>Demographic Characteristics</b>	Number (n= 260)	Percentage		
1. Sex				
Male	71	27.3		
Female	189	72.7		
2. Age (years)				
60-69 years	133	51.1		
70-79 years	82	31.5		
Older than 80 years	45	17.4		
$(\overline{X} = 68.91, SD. = 7.69, Min = 60, Max = 92)$				
3. Religion				
Buddhism	260	100.0		
4. Marital Status				
Single/divorce/widow/separated	120	46.1		
Couple	140	53.9		
5. Resident				
House	260	100.0		
6. Education Level				
literacy	2	0.7		
Primary School Level	185	71.3		
Secondary School Level	51	19.6		
Bachelor	22	8.4		

<b>Demographic Characteristics</b>	Number (n= 260)	Percentage		
7. Occupation				
Agriculturist	43	16.6		
General Hire	39	15.0		
Government/State Enterprise Officer	32	12.3 15.0		
Company Employee/Merchant/Business	39			
No work	107	41.1		
8. Income				
600 baht	34	13.0		
More than 600 baht	226	87.0		
9. Number of Family Member				
Less than 5 persons	193	74.4		
Between5-7 persons	53	20.3		
More than 7 persons	14	5.3		
10. Receiving elderly care allowances				
Received	224	86.1		
Not Received	36	13.9		
11. Elderly Group				
Group 1 Social Attached	174	67.0		
Group 2 House Attached	80	30.7		
Group 3 Bed Attached	6	2.3		
12. Annual Physical Check up				
Yes	220	84.6		
No	40	15.4		
13. Chronic sickness				
Yes	152	58.4		
No	108	41.6		

# **Knowledge Level on Primary Health Care Services**

Considering on each item on knowledge on primary health care services of elderly, it was found that on the primary health care unit is a place that provide for only people who lived in the area with 99.2 percent, primary health care unit has promotion on good health for people such as providing the exercise area for instance 97.5 percent, Primary health care unit is a place for

giving knowledge and consulting for health and primary health care unit emphasizes on health promotion, disease prevention, nursing, rehabilitation, and protection the consumer with 94.2 percent respectively. The item with the least right answer was when get the minor sickness, people can receive the service from primary health care unit without showing their right before getting service with 64.5 percent, When get the minor sickness, people is able to choose to get service from primary health care service at the first place with 77.7 percent and primary

health care unit has Thai traditional medicine such as herbal sauna, massage, and using herb drug to treatment diseases with 90.1 percent respectively as present in Table 2.

Table 2

Number and Percent of Correct Knowledge on Primary Health Care Services

Knowledge on Primary Health Care Services	Right Number (n=260)	Percentage	
Primary health care unit is a place that provide for only people who lived in the area	120	99.2	
2. Primary health care unit has promotion on good health for people such as providing the exercise area for instance.	118	97.5	
3. Primary health care unit is a place for giving knowledge and consulting for health.	114	94.2	
4. Primary health care unit emphasizes on health promotion, disease prevention, nursing, rehabilitation, and protection the consumer.	114	94.2	
5. The characters of the righted person to receive the service from primary health care unit is only a Thai citizen.	113	93.4	
6. There is public relation in health facet such as leaflet and poster.	112	92.6	
7. Primary health care unit provides the primary care such as sewing the wound, dressing the wound, and give medicaine for instance.	110	90.9	
8. Primary health care unit has Thai Traditional medicine such as herbal sauna, massage, and using herb drug to treatment diseases.	109	90.1	
9. When get the minor sickness, people is able to choose to get service from primary health care service at the first place.	94	77.7	
10. When get the minor sickness, people can receive the service from Primary health care unit without showing their right before getting service.	78	64.5	

Considering on knowledge level on primary health care services of elderly in holistic view was at high

level with the mean of 8.94 (S.D. = 1.48) and in term of percentage was 82.6 percent as showed in Table 3.

**Table 3**Number, Mean, and S.D., of Knowledge on Primary Health Care Services of Sample Group

Knowledge Level on Primary Health Care Services	Knowledge Level on Primary Health					_			
	Care Services (n = 260)								
	High		Moderate		Low		x s)X	SD.	Interpretation
	(7-10 scores)		(4-6 scores)		(0-3 scores)				
	No.	%	No.	%	No.	%			
Knowledge Level on	215	82.6	33	12.8	12	4.6	8.94	1.48	Uiah
<b>Primary Health Care Services</b>	213	02.0	33	12.8	12	4.0	0.94	1.48	High

# Problems and Requirements of Primary Health Care Services of Elderly Peoples

- 1. Problems of primary health care services of elderly peoples were as following:
- 1.1 Elderly group had the health problem for unhealthy due to increased old age and chronic diseases. The majority had the history of chronic diseases that required health service regularly.
- 1.2 Elderly group had the anxiety for high service fee. The elderly had no income and poor basic family.
- 1.3 The inconvenience to receive the health service since the elderly needs the other people to take care to get service for long time consumption and Primary Health Care Services is crowed because there are a lot of patients.
- 1.4 The officers who provide the service is unable to clearly explain for elderly to understand, therefore, it makes a confusion of practice to receive services. Moreover, it consumed time for waiting.
- 2. Requirements of Primary Health Care Services of Elderly Peoples were as following:
- 2.1 The elderly requires the health care at house by visiting as proactive by officers and community volunteer by giving empowerment regularly.

- 2.2 The elderly requires the service at community level due to inconvenience to receive the health services unit.
- 2.3 The elderly wants the officers to fully and friendly provide services.
- 2.4 The elderly wishes to have public relation on health information in community.
- 2.5 The elderly wants to participate in community activities such as exercise together.
- 2.6 The elderly wants to be healthy and long live and wants people to visit.
- 2.7 The elderly needs love and care from their children.

# 2. Results of the Second Stage Research

The results were revealed that, the states and problem of the system of primary health care services for the elderly in Maha Sarakham Municipality by using focus group discussion about the problems and obstacles in implementation of primary health care services for the elderly were as followings:

1) The problems of implementation, it was found that it was occurred from the work system such as implementation of project of health promotion and prevention for people is not continuous. However, they did not understanding the practice and had no clear planning

to take care the elderly in community ineffectively that caused the health problem of elderly with tendency of problem increasing.

- 2) Lack of evaluation in activity, it was found that majority of service provider will implement activity according to the set plan but it lacks of evaluation and there is no conclusion of activity. Besides, the planning is not clear due to time for prepared readiness both in activity and the limitation of area for arranging the different activities in each community.
- 3) The collaboration in activity, the elderly is not convenient to participate, therefore the real problem is still unknown whether it occurs from the unclear collaboration that makes elderly did not know the detail of activity since the majority of elderly who joined the activity were the social attached group and they were able to help themselves but the other groups who did not participate. It might due to their own problems.
- 4) According to the unfulfilled budgets for activity implementation and no clear plan, therefore the activity cannot serve the demands of elderly in community.

#### Discussion

The First Stage, to study problems and requirements of primary health care services for elderly in Maha Sarakham municipality, the knowledge level on primary health care services as holistic view was at high level with mean scores of 8.94 (S.D. =1.48). This result is congruent to the study of Chalermsri Suthon (2006), and Pusdorn, et al., 2013 which the result show that elderly health care knowledge was at high level after training course finished (Pusdorn, et al., 2013). It also pertinent to study of Pichyasinee Mongkonsiri and Pakanut Wongkochsuwan (2550) but it not relevant to the study of Sarinyaporn PuengNgernmak (2549), who revealed that the knowledge was at moderate level.

The problems and requirements of primary health care services of elderly, it was revealed that the elderly had physical problems due to chronic diseases and economic problem was found that the elderly had not enough income; therefore, they are concerned about travelling expenses and health service fee when they went to receive the services. Additionally, the inconvenience to receive the service, they need caregiver to take them to service unit and to receive the service consumed time and there was crowed of patients waiting to get services. Moreover, the officers explain unclear that makes the elderly did not understand and get confuse for practicing to receive the service and long time consumption to get the service. This is congruent to the study of Voranuch Borvornnuntadech, 2003 and Pichyasinee Mongkonsiri and Pakanut Wongkochsuwan, 2007, Nutanicha Uttayotha, 2012 in aspect of requirement of primary health care services of elderly, it was found that in their aspect of physical health, the elderly wants to have a healthy and long life by receiving the regular care. In the mental aspect, it was found that the elderly needs love and care from their children. In social aspect, it was found that the elderly wish to participate in community activities such as exercise in community and needs the public relation on information about health in community continuously.

The second stage, studying on states and problems of the system of primary health care services for the elderly in Maha Sarakham Municipality.

From focus group discussion, problem and obstacles occurred from the implementation of service providers in aspect of process, it was found that the work was not continuous and lack of public relation, and lack of community participation because the activity was arranged by service providers as a key person and unclear practice so the implementation can not be done effectively. This caused the health problem for elderly continuously. Moreover, the lack of work evaluation, therefore the

problem is unknown. The activity implantation is not mainly concern for the elderly to participate activity. Budget aspect is not enough for activity implementation and there was no clear plan to implement, therefore the activity did not serve demands of community elderly.

# **Suggestions**

#### 1. Suggestion from research

- 1.1 The climate issues are cause difficulty and delay in data collection process.
- 1.2 Some elderly has a hearing problem due to their very old age, so it causes the difficulty of communication.

## 2. Suggestion for further research

- 2.1 It should study on the proper model of problem solving for elderly health in order to search the appropriate model to solve the elderly health problem such as psychological health, nutritional health, and other often chronic diseases in elderly.
- 2.2 It should study on the different model of activity arrangement for elderly in order to search the appropriate activity pattern such as exercise activity, experience exchanging among elderly, and knowledge transferring including setting the fund for elderly club, and supporting the primary health implementation for instance, in order to adjust the elderly attitude to meet the other elderly, particularly, elderly who is house attached.



#### References

- Bloom, D. E., Canning, D., & Graham, B. (2003). Longevity and life cycle savings. *Scandinavian Journal of Economics*, 105(1), 319-338.
- Borvornnuntadech, V. (2003). *People satisfaction towards primary health care unit of Nong Jok, Bangkok*. Master of Public Administration Thesis, Kasem Bundit University. (in Thai)
- Creedy, J. (1998). Pensions and population ageing: An economic analysis. Northampton: Elgar Publishing.
- Crimmins, E. (1997). Trends in mortality, morbidity, and disability: What should we expect for the future of our ageing population. In International Population Conference, Beijing, 1997, vol. 1. Liège, Belgium.
- Cronbach, J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- de Jong-Gierveld, J., & van Solinge, H. (1995). *Ageing and its consequences for the socio-medical system. Population Studies*. Strasbourg, France: Council of Europe Press.
- Holliday, R. (1999). Ageing in the 21st century. The Lancet, 354, doi:10.1016/S01406736(99)90347-1
- Lesthaeghe, R. J. (2010). The unfolding story of the second demographic transition. *Population and Development Review*, 36(2), 211.
- Maranet, N. (2012). *Tendency of increasing of older people over the world and in Thailand*. Retrieved from http://service.nso.go.th/nso/data/02/wld\_pop47.html (in Thai)
- Ministry of Public Health. (2007). *National health development plan no. 10 (B.E. 2550-2554)*. Nonthaburi: Author. (in Thai)

- Mongkonsiri, P., & Wongkochsuwan, P. (2007). Study on satisfaction, perception, and confidence of service user toward primary health care service unit. Udon Thani: Boromrajonnani Colleage of Nursing Udon Thani. (in Thai)
- Office of National Economic and Social Development Plan. (2010). *The Tenth national economic and social development plan B.E. 2550-2554*. Retrieved from http://www.nesdb.go.th/Default.aspx?tabid=90 (in Thai)
- Office of National Statistic. (2016). *Survey report of elderly population in Thailand B.E. 2550*. Retrieved from http://www.ons.gov.uk/ons/index.html (in Thai)
- Pollard, J. H. (1995). Long-term care in selected countries: demographic and insurance perspectives. *Zeitschrift für Bevölkerungswissenschaft*, 20(3), 293-310.
- Population Division, Department of Economic and Social Affairs (DESA), United Nations. (2001). World population ageing 1950-2050. New York: United Nations Publications.
- Pueng-Ngern- Mak, S., (2006). Satisfaction of clients to services at Papong primary care unit Papong subdistrict,

  Doisaket district, Chiang Mai province. Master of Nursing Thesis, Chiang Mai University. (in Thai)
- Pusdorn, A., Thiengkamol, N., & Thiengkamol Khoowaranyoo, T. (2013). Elderly self health care in Roi-Et province. European Journal of Scientific Research, 104(4), 569-579. (in Thai)
- Ratanatikul, N., et al. (2012). World population. Retrieved from http://cpe.kmutt.ac.th/wiki/index.php (in Thai)
- Rovinelli, J., & Hambleton, K. (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. *Dutch Journal of Educational Research*, 2(1), 49-60.
- Suthon, C. (2006). Behavior and demands of service receiver at primary health care unit of Ban Hae community.

  Independent Study of Master Degree in Business and Administration in General Management Program,

  Phranakhon Si Ayutthaya Rajabhat University.(in Thai)
- Thiengkamol, N. (2011). Holistically integrative research. Bangkok: Chulalongkorn University. (in Thai)
- United Nations. (2001). World population ageing: 1950-2050. Retrieved from www.un.org/esa/population/publications/worldageing19502050/
- Uttayotha, N. (2012). Health management in local fund health security by public network at Maesuk subdistrict, Maechai district, Phayao province. Master of Nursing Thesis, Chiang Mai University. (in Thai)
- Yamane, T. (1973). Statistics: An introductory analysis (3<sup>rd</sup> ed.) Tokyo: Harper International Edition.

