Problems and Needs of the Elderly in Northern Thailand Remote Area

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ABSTRACT

The purpose of this study was to examine and predict factors influencing the problems and needs of the elderly who live in remote areas in Northern Thailand. A cross-sectional study in which 795 elderly people, 60 years of age or older, in Jadeekham subdistrict, Phayao province, participated in a screening from November to December 2011. Health assessments were conducted on the problems and needs for services and on the status of physical, functional, cognitive, emotional, nutritional, and social factors of particpants. Data were collected by a research team and were analyzed using descriptive statistics and stepwise multiple regression. In general, the elderly in Jadeekham subdistrict had more than one disease, limited functional capabilities, and poor behavior related to health. They had a low level of cognitive ability, a high level of depression, and a high level of need for financial and psychological support. The factors contributing to financial and psychological service need were low functional capabilities, lack of caregivers, lack of exercise, low cognitive ability, age, sex, and depression. The study results suggest that the health problems and needs of the Thai elderly living in a rural area are multiple and complex. Awareness of health problems and needs should help officials plan and design health programs and implement interventions for the care of the elderly. Cooperation between local governments, the health sector, and the community for taking care of the elderly population who live in remote areas are recommended.

Keywords: health problems and needs, elderly, remote/rural area, northern Thailand

บทคัดย่อ

การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาหาปัจจัยทำนายปัญหาและความต้องการของผู้สูงอายุที่อาศัยอยู่ในพื้นที่ห่างไกล งานวิจัยนี้เป็นการศึกษาแบบภาคตัดขวาง ในกลุ่มผู้สูงอายุที่มีอายุตั้งแต่ 60 ปีขึ้นไป จำนวน 795 คน ที่อาศัยอยู่ในเขตตำบลเจดีย์คำ อำเภอเชียงคำ จังหวัดพะเยา ที่เข้าร่วมในการตรวจคัดกรองสุขภาพในช่วงเดือนพฤศจิกายนถึงธันวาคม 2554 ในการประเมินภาวะสุขภาพเพื่อหาปัญหาและความต้องการบริการของผู้สูงอายุประกอบด้วยปัจจัยทางด้านร่างกาย การทำหน้าที่ การรู้คิด อารมณ์ ภาวะ

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โภชนาการ และปัจจัยทางสังคม มีการเก็บรวบรวมข้อมูลโดยทีมวิจัย วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและการวิเคราะห์สมการถดถอยพหุคูณแบบเป็นขั้นตอน ผลการศึกษาพบว่าผู้สูงอายุที่อาศัยอยู่ในพื้นที่ห่างไกล มีมากกว่าหนึ่งโรค มีข้อจำกัดในความสามารถในการทำงาน มีพฤติกรรมสุขภาพที่ไม่ดี มีความสามารถในการรู้คิดอยู่ในระดับต่ำ มีภาวะซึมเศร้าอยู่ในระดับสูงและมีความต้องการการดูแลทางด้านเศรษฐกิจและจิตใจอยู่ในระดับสูง ปัจจัยที่มีผลต่อความต้องการการดูแลในด้านเศรษฐกิจและจิตใจประกอบด้วย ปัจจัยด้านความสามารถในการทำหน้าที่ต่ำ ขาดผู้ดูแล ขาดการออกกำลังกาย ความสามารถด้านการรู้คิดอยู่ในระดับต่ำ อายุ เพศ และมีภาวะซึมเศร้า การศึกษานี้พบว่าปัญหาของผู้สูงอายุมีหลากหลายและซับซ้อน การตระหนักถึงปัญหาสุขภาพมีความจำเป็นที่จะช่วยบุคลากรทางสุขภาพในการออกแบบการดูแลผู้สูงอายุ ความร่วมมือกันระหว่างองค์กรปกครองส่วนท้องถิ่น หน่วยงานสาธารณสุข และครอบครัวมีบทบาทสำคัญในการดูแลผู้สูงอายุ ที่อาศัยอยู่ในพื้นที่ห่างไกล

คำสำคัญ: ปัญหาสุขภาพและความต้องการ ผู้สูงอายุ พื้นที่ชนบทห่างไกล ภาคเหนือ ประเทศไทย

INTRODUCTION

Population aging has been increasing rapidly during the past decades. It is expected that the proportion of Thai elderly will increase from 11.1 percent in 2008 to 14.0 percent in 2015 and the highest proportion of older adults in Thailand will be in the northern part of the country (16.0%) by 2015 (Institute for Population and Social Research, Mahidol University, 2006). The most commonly reported chronic diseases were hypertension (31.1%), diabetes mellitus (13.3%), heart disease (7.0%), and paralysis and semi paralysis (2.5%) (National Health Examination Survey Office (NHESO), 2010). The physical deterioration of the elderly leads to less functional disabilities and dependency.

Jadeekham is a remote, mountainous area in northern Thailand whose population contains a high percentage of elderly people. The area has a relatively higher ratio of dependent elderly people than that of the national ratio. In general, half of the elderly in Jadeekham had a child who died from HIV/AIDS. The elderly population in Jadeekham has high rates of poverty and powerlessness that lead them to a high incidence of morbidity and mortality, very low access to healthcare services, and a lack of family members to take care of them. Association between inadequate care and adverse health outcomes for the elderly, and unmet needs have been defined as the absence of informal assistance, formal services, or some combination of both accompanied by Activities of Daily Living (ADL) needs (Gaugler, Kane, Kane, & Newcomer, 2005; Sands, Wang, McCabe, Jennings, Eng, & Covinsky, 2006; Sasat, Chuwatthanapakorn, Pakdiprom, Lertrat, & Arunsaeng, 2009), and other various concerns including psychological, behavioral, and social needs (Georges, Jansen, Jackson, Meyrieux, Sadowska, & Selmes, 2008). The Thai government revised the existing health care service system to enhance capacity to provide adequate services to the rural elderly, as well as to search for alternatives that could efficiently serve needs and improve the quality of life of the elderly. Among many approaches, home and community care has been initiated as the most suitable strategy to deal with these needs. There is a crucial need to develop community care interventions using community resources that are directed toward the older population (Srithamrongsawat, Bundhamcharoen, Sasat, Odton, & Ratkjaroenkhajorn, 2009). This strategy is meant to maximize utilization of the existing and available resources within the community since family and community participation are basic components of care provision. The goal of capacity building is to develop the community and its health services.

Assessment is the first step in the development process of community care

interventions that will optimize the independence and functional ability of the elderly. The problems and needs of the elderly in the community are multifaceted. Therefore, assessment is needed on multidimensional aspects, including physical, psychological, economical, and social needs. However, there is little data on a comprehensive assessment of the elderly living in remote, rural areas.

The purposes of this study were to describe the characteristics of the elderly and to examine the relationship between the problems and needs of the elderly in remote northern Thailand. This information may be useful to health care service providers and officials who plan to introduce or improve community care services.

MATERIALS AND METHODS

Study design, sample and study site

This cross sectional study was conducted from November to December 2011. The sample consisted of 795 adults aged ≥ 60 years who were selected by purposive sampling and then underwent a health screening. As part of the screening, structured interviews and health assessments were conducted to identify health problems and needs of the elderly who lived in Jadeekham subdistrict, Chiangkham district, Phayao province.

Research instruments

Three research questionnaires were used:

Health status

Structured interviews were conducted using questions that assessed disease history, physical status, cognitive status, emotional status (depression), and functional capability. Public health nurses conducted health assessments to identify health history and current physical, psychological, social, and economic status.

1. Cognitive status was assessed using the thirteen-itemed Chula Mental Test (CMT) to assess cognitive function and dementia symptoms in the elderly (Jitapunkul, Worakul, & Kiatprakoth, 2000). The method of assessment involved the researcher interviewing the participants using a 13-item questionnaire (total score of 19). Participants who had a score lower than 15 were considered to have impaired, cognitive functioning.

2. Emotional state was assessed using two items developed by the Thai Ministry of Public Health. The instrument was used to assess stress and depression symptoms in the elderly. Each participant was interviewed to ascertain how much they had experienced certain things in the last two weeks. Participants who had a score lower than 2 were deemed to be stressed and depressed.

3. Functional capability was assessed using a scale of twenty items of activities-of-daily-living (ADL). The ADL are the functions that are fundamental to independent living, such as dressing and bathing. The scoring of each item ranged from 0 to 2, with 2 indicating no assistance needed, 1 indicating partial assistance needed, and 0 indicating assistance needed. The summed scores ranged from 0 to 20. The level of dependence was determined using criteria developed by the Ministry of Public Health. The levels of dependence were 0–4 (total dependence), 5–11 (partial dependence) and 12 (higher independence). The reliability of the instrument, as measured by Cronbach's alpha, was $\alpha = 0.85$.

Health-related behavior

The health-related behavior was assessed by six items that asked for a binomial responses (i.e., ''Yes = 1'' or ''No = 2'') for levels of alcohol consumption, smoking, eating and any change in body weight, length of sleep, and performance of regular exercise.

Health and community care service needs

The need for health and community care service was assessed by twelve items that were developed by the research team. The instrument had two components, consisting of nursing service and community care service, and each item was assigned a score up to 3. A higher score indicated a higher

level of need. The reliability of the instrument, as measured by Cronbach's alpha, was $\alpha = 0.80$.

Data collection procedure

Data were collected by the researcher who interviewed and assessed the elderly during the screening phase using the instruments described above.

Data analysis

Demographic data, health status, health related behaviors, social support, and problems and needs were analyzed by descriptive statistics consisting of frequency, mean, and standard deviation.

Factors that influenced the health problems and needs were analyzed using stepwise multiple regression. The independent variables were demographic factors, physical health status, functional status, cognitive status, emotional status, health related behaviors, and social support. The dependent variables were problems and needs of the elderly.

RESULTS

A sample of 795 elderly people who lived in 12 villages of Jadeekham subdistrict were interviewed and screened for their health problems and needs. Approximately half of the elderly (51.82%) were aged 60–69 years and more than half were women (52.0%) and married (59.8%). Regarding educational background, most (88.8%) had finished primary school and 5.6 percent had no education. All of the participants were Buddhists. The majority (73.6%) had adequate income and less than half were working as laborers (44.8%). Three groups of elderly were identified based on the ADL screening: active (71.5%), partially dependent (22.1%), and dependent (6.4%).

Health problems of the elderly in Jadeekham subdistrict

The most common health problems of the elderly were 24.8 percent with hypertension, 12.8 percent with diabetes mellitus, 23.9 percent with sight problems, 14.5 percent with oral health problems, 8.3 percent with hearing problems, and 5.6 percent with gout (5.6%) (Table 1).

Table 1 Distribution of main health problems of the participants

(n = 795)

Health status	Men (382)		Women (413)		Total (795)	
	n	%	n	%	n	%
Hypertension	80	10.1	117	14.7	197	24.8
Sight problem	78	9.8	112	14.1	190	23.9
Oral health problem	60	7.6	55	6.9	115	14.5
Diabetes	33	4.2	68	8.6	101	12.8
Hearing problem	30	3.8	36	4.5	66	8.3
Gout	17	2.1	28	3.5	45	5.6
Coronary/vascular disease	18	2.3	16	2.0	34	4.3
COPD	15	1.9	12	1.5	27	3.4
Peptic ulcer	6	0.8	11	1.4	17	2.2
Kidney	5	0.6	4	0.5	9	1.1
Asthma	0	0.0	3	0.4	3	0.4
None	185	23.3	197	24.8	382	48.1

Health-related behavior

Health-related behavior assessed by the level of alcohol consumption showed that 8.5 percent of the elderly drank alcohol, 55.9 percent did not drink, and 35.1 percent drank alcohol "sometimes". Smoking data showed that 16.9 percent of the elderly smoked, 50.8 percent did not smoke, and 32.2 percent were former smokers. The exercise data indicated that 54.2 percent of the elderly exercised regularly, 27.1 percent never exercised, and 18.6 percent exercised "sometimes". Among the elderly 66.1 percent ate raw food and 33.9 percent did not. The average amount of sleep per night was 7.39 hours (SD = 0.95).

Need for health and community care service

Physical service

The mean score of the need for physical services such as health care, personal assistance, exercise and rehabilitation was 1.68 (range 1–4). Sixty one percent of the elderly did not need physical services, 15.3 percent had a low level of need, 18.6 percent had a moderate need, and 5.1 percent had a high need for physical services.

Financial and psychological service

The mean score for financial and psychological service needs was 2.14 (range 1–4). The level of financial and psychological service need indicated that 49.2 percent of the elderly did not need the service, 10.2 percent needed the service at a low level, 18.6 percent needed the service at a moderate level, and 22 percent needed the service at a high level. The financial and psychological service needs were for income and emotional service, such as having someone to talk with and take care of them when they were ill.

Culture and recreational service

The mean score for cultural and recreational service needs was 1.4 (range 1– 4). The level of cultural and recreational service needs showed that 64.4 percent of the elderly did not need this service, 27.1 percent needed the service at a low level, and 8.5 percent needed the service at a moderate need. The cultural and recreational service needs were recreational services, a festival for the elderly, and demonstrating filial piety.

Factors influencing health and community care service needs

To provide the explanatory power of all variables that influence health and community care service needs, demographic data, health status, and social support were treated as independent variables. Financial status was excluded, as this was similar among the study participants. Variables included in the stepwise multiple regression were educational level, marriage status, sex, age, chronic diseases, cognition ability, emotional status, nutritional status, ADL, presence or absence of caregiver, and behavior related to health such as alcohol consumption and exercise. The discontinuous variables were recoded as dummy variables before analysis. The results are shown in Table 2.

When all twelve independent variables were regressed on physical service needs, five variables were found to be significant—ADL, caregivers, cognitive status, exercise, and sex. These five variables were entered into the regression model and accounted for total variances of 43.4 percent.

When all variables were regressed on the cultural and recreational service needs, five variables were found to be significant—ADL, caregiver presence, cognitive status, exercise, and sex. The five variables were entered into the regression model and accounted for total variances of 37.0 percent.

When all variables were regressed on the financial and psychological service needs, seven variables were found to be significant—ADL, caregiver presence, cognitive status, exercise, sex, age, and emotional status. The seven variables were entered into the regression model and accounted for total variances of 47.8 percent.

When all 12 independent variables were regressed on the total service needs, six variables—ADL, education, cognitive status, exercise, age, and

caregivers were found to be significant in leading to the total services needs. The six variables were entered into the regression model and accounted for total variances of 40.1 percent.

DISCUSSION

Compared to the health status of the elderly reported in other studies (Kespichayawattana & Jitapunkul, 2009; Uwakwe, Ibeh, Modebe, Bo, Ezeama, & Njelita, 2009; Srithamrongsawat et al., 2009), the high prevalence of chronic diseases reported by study participants was a result of the physiological changes of aging. Problems with vision, hearing, and oral health were higher than those of Thai elderly in general (Knodel & Chayovan, 2008; NHESO, 2010).The health status of the elderly worsens with the aging process, and their subjective awareness of this situation influences their health service needs (Kespichayawattana & Jitapunkul, 2009).

Financial and psychological service was the most common need identified in health and community care services followed by physical care, and then cultural and recreational services. Factors influencing the elderly in financial and psychological service needs were age, sex, available caregiver, exercise, cognitive ability, emotional status, and ADL performance. The analysis of factors influencing financial and psychological service needs showed that the level of economic level was excluded because all elderly were receiving compensations for living costs from the government. However, the income was insufficient when the elderly became ill. ADL and exercise performance were identified as important factors in the elderly. The limitation of functional ability may lead to difficulty in social networking and decreased social activities which cause social isolation, emotional problems, and decreasing income-producing activities. Age and sex were variables that may be associated with decreasing

Table 2 Factors influencing health and community care service needs.

(n = 795)

Variable	Physical		Cultural		Economic / psychological		All service	
	β	t	β	t	β	t	β	t
Constant	3.756		4.070		4.691		4.170	
Sex	.115	4.213*	.080	2.771*	.057	2.163*	.035	1.231
Age	-.036	-1.295	-.054	-1.851	-.083	-3.116*	-.083	-2.905*
Status	-.023	-.819	-.001	-.020	-.030	-.952	-.061	-1.881
Caregivers	-.261	-9.106*	-2.273	-.900*	-.332	-11.957*	-.327	-11.074*
Education	.026	.937	.013	.441	.044	1.634	.062	2.134**
Chronic disease	.091	.675	-.005	-.168	-.026	-.933	.020	.689
ADL	-.380	-13.466*	-.261	-8.745*	-.324	-11.764*	-.264	-8.748*
Exercise	-.192	-7.041*	-.161	-5.483*	-.105	-3.110*	-.059	-2.079**
Alcohol consumption	.042	1.484	.012	.412	-.009	-.342	-.000	-.001
Cognitive status	-.270	-10.015*	-.317	1.107*	-.347	-13.166*	-.330	-11.744*
Emotion status	-.019	-.680	-.015	-.519	-.060	-2.524**	-.038	-1.340
Nutrition status	-.005	-.195	-.109	-3.745	-.024	-.900	-.048	-1.720
R^2	0.434		0.370		0.478		0.401	

** $p < .01$, * $p < .05$

income source and physical ability, consequently contributing to financial difficulties. The presence of a caregiver was an important determinant of the need for financial and psychological support. Elderly respondents having a caregiver needed less psychological support than those who lacked a caregiver.

Factors influencing the elderly physical service needs were sex, available caregiver, exercise, cognitive ability, and ADL performance, but they did not include chronic diseases and emotional status. This may be explained in part by the absence of data on disease severity in this study, as this may have greater impact on the elderly physical service needs. Female elderly were often the ones providing and receiving more support than male elderly (Shaw, Krause, Liang, & Bennett, 2007). However, their study also notes that men are happier with their support systems overall. With regard to their level of cognition of the health status, the majority of elderly were aware of their health status. The health status of elderly worsens according to their age, and their subjective awareness of this situation would influence their health service needs (Srithamrongsawat et al., 2009). Depression among the elderly living in remote areas was important because many elderly could not look after themselves and had to skip treatment sometimes due to financial constraints.

Culture has a positive effect if it promotes the integration of physical, social and spiritual health (Ebersole, Hess, & Luggen, 2004). Smoking and drinking alcohol were not exhibited by any of the informants during the study. Drinking alcohol is the culture of young people in Phayao province and they apparently stop when they become elderly. The elderly perceived that alcohol consumption affected their health, and they needed to be good role models for their children. Good family relationships are major components of the healthy elderly (Danyuthasilpe, Amnatsasue, Tanasugarn, Kerdmongkol, & Steckler, 2009). However, these factors need to be considered along with other influencing factors identified in the area of cultural and recreational service needs.

The level of education and skill in reading and writing were influencing factors of all service needs of the elderly in the remote area. Education has a direct effect on preventive health by raising awareness of the importance of undertaking regular health check-ups and hence the willingness to do so (Hammond, 2002). Education may also improve the ways in which individuals understand information regarding periodical tests, communication with health personnel, and the interpretation of the results (Hammond, 2003). This may be explained by the fact that education can improve the health of the elderly. The interventions for elderly needs were to integrate knowledge about useful, safe, and appropriate changes and to help them to acquire such strategies (Demers, Robichaud, Gélinas, Noreau, & Desrosiers, 2009).

CONCLUSION

The health problems of the rural elderly are multiple and complex and their service needs are interrelated. The greatest need of the elderly was for financial and psychological care, while other factors, such as age, sex, ADL, caregiver presence, emotional status, and their cognitive status contributed to these service needs. In this study, the elderly living in a remote area required public health services, social welfare, and community care services. Developing community capacity through the integrated services of local government will play an important role in improving the health of the elderly who live in remote areas of Thailand.

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REFERENCES

Danyuthasilpe, C., Amnatsasue, D., Tanasugarn, C., Kerdmongkol, P., & Steckler, A. B. (2009). Ways of healthy aging: A case study of elderly people in a Northern Thai village. *Health Promotion International, 24*(4), 394–403.

Demers, L., Robichaud, L., Gélinas, I., Noreau, L., & Desrosiers, J. (2009). "Coping strategies and social participation in older adults. *Gerontology, 55*(2), 233–239.

Ebersole, P., Hess, P., & Luggen, A. S. (2004). *Toward healthy aging: Human needs and nursing response*. St. Louis, MO: Mosby–Year Book.

Gaugler, J. E., Kane, R. L., Kane, R. A., & Newcomer, R. (2005). Unmet care needs and key outcomes in dementia. *Journal of the American Geriatrics Society*, *53*, 2098–2105.

Georges, J., Jansen, S., Jackson, J., Meyrieux, A., Sadowska, A., & Selmes, M. (2008). Alzheimer's disease in real life the dementia carer's survey. *International Journal of Geriatric Psychiatry*, *23*, 546–551.

Hammond, C. (2002). *Learning to be healthy, The wider benefits of learning papers No.3.* London: Institute of Education.

Hammond, C. (2003). How education makes us healthy. *London Review of Education, 1*(1), 61–78.

Institute for Population and Social Research (IPSR), Mahidol University. (2006). *Population projections for Thailand,* Nakhon Pathom: Institute for Population and Social Research. 2005–2025. [in Thai]

Jitapunkul, S., Worakul, P., & Kiatprakoth, J. (2000). Validity of clinical use of the clock-drawing test in Thai elderly patients with memory problems. *Journal of the Medical Association of Thailand*, *83*, 342–347. Retrieved from http://portal.thaiquest.com/ojs /index.php/JMAT/article/view/85

Kespichayawattana, J., & Jitapunkul, S. (2009). Health and health care system for older person. *Aging International*, *33*, 28– 49.

Knodel, J., & Chayovan, N. (2008). *Population aging and the well- being of older presons in Thailand*, Bangkok,: UNFPA Thailand.

National Health Examination Survey Office (NHESO). (2010). *The report of Thailand population health examination survey IV 2008-2009*. Nonthaburi: The Graphico Systems. [in Thai]

Sands, L. P., Wang, Y., McCabe, G. P., Jennings, K., Eng, C., & Covinsky, K. E. (2006). Rates of acute care admissions for frail older people living with met versus unmet activity of daily living needs. *Journal of the American Geriatrics Society*, *54*, 339–344.

Sasat, S., Chuwatthanapakorn, T., Pakdiprom, T., Lertrat, P., & Arunsaeng, P. (2009). *Institutions for long-term elderly care in Thailand*. Bangkok: Health Systems Research Institute and Foundation of Thai Gerontology Research and Development. [in Thai]

Shaw, B. A., Krause, N., Liang, J., & Bennett J. (2007). Tracking changes in social relations throughout late life. *Journal of Gerontology*, *62*, 90–99.

Srithamrongsawat, S., Bundhamcharoen, K., Sasat, S., Odton, P., & Ratkjaroenkhajorn, S. A. (2009). *Projection of demand and expenditure for institutional long term care in Thailand*. Retrieved from http://www.academia.edu/1351987/Projection_of_demand_and_expenditure_for_institutional_long_term_care_in_Thailand.

Uwakwe, R., Ibeh, C. C., Modebe, A. I., Bo, E., Ezeama, N., & Njelita, I. (2009). The epidemiology of dependence in older people in Nigeria: Prevalence, determinants, informal care, and health service utilization. A 10/66 Dementia Research Group cross-sectional survey. *Journal of the American Geriatrics Society*, *57*, 1620–1627.