

Health Status and Its Relation to Behaviors, Symptoms and Housing Environments of Elderly Persons in Warrens of Central Bangkok, Thailand

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Abstract

Introduction: The rising number of older persons in Asia has accentuated the importance of strengthening the social protection system in the region. Recent financial crises highlighted concerns that governments have inadequate resources to assume major responsibility for elderly care. The financial support for the elderly is likely to become a more serious problem and divisive social issue. The aim of the study: To study the health status and its relation to behaviors, symptoms and housing environment of elderly persons in the warrens of central Bangkok, Thailand. **Methods:** The cross-sectional study (of 434 elderly persons in five warrens) was conducted by interviewing the subjects on their behaviors, health status (latest symptoms in the last 1 month) and housing environments. **Results:** This study showed that most of elderly persons had moderate health with 74.7% congenital disease of 67.9% hypertension, 36.1% diabetes and 24.1% high-cholesterol, respectively. The symptoms observed in the last 1 month were non-specific symptoms (63.5%), respiratory symptoms (14.1%) and skin irritation (4.4%). The health status of participant-elders was related to exercise ($p < 0.001$), non-specific symptoms of fatigue ($p < 0.05$) and moody ($p < 0.05$), respiratory symptoms of cold ($p < 0.05$) and throat irritation ($p < 0.05$). In addition, health status showed relation to environment of cooking in house ($p = 0.01$), using mosquito repellent and insecticide ($p < 0.05$) and using air condition ($p < 0.01$). **Conclusion:** The health status of elderly persons was significantly related to their behavior (of exercise), symptoms (respiratory and non-specific symptoms), and environmental conditions. The ministry of health should encourage the improving on education in health care and annual physical examination promotion for elderly persons.

Keywords: health status, behavior, symptom, environment, elderly person

INTRODUCTION

The world's population is growing older as exhibited in Japan with the highest life expectancy in the world.^[1] For Thailand, the number of elderly persons will increase from the current 6.4 million to 9.0 million in 2015, 12.9 million in 2025 and would exceed 20 million in 2050.^[2] The elder population in Asia, with 17% age 65 and older, is the most rapidly aging population in the world.^[3] This growing number of elderly persons influenced the extended duration of social security, welfare payments and increasing need for care of old's morbidity and disability.

The Thai-Government established the National Commission on the Elderly which currently operated on the Second National Plan for Older Persons (2002-2021).^[4] It focuses on the preparation for quality ageing, the well being of older persons, social security. The Ministry of Public Health is encouraging community hospitals to run elderly clinics periodically and to provide home health services by visiting older persons at their place of residence. Older people are entitled for free health care services at all state-run health stations/hospitals. Emphasis is also laid on health promotion for the elderly through temples and older people's clubs. This research aimed to study health status of elder persons in warrens and its relation to

behaviors, symptoms and environment for supporting plan to improve the quality of life.

MATERIALS AND METHODS

Population study

A total of 434 elderly people (60 year and older) in 5 warrens (Wat Pathum Wanaram, Bonkaipattana, Soi Prajane, Salakhin and Chaochoocheep) of Pathumwan district, Bangkok, Thailand, and have been living in for more than 3 months, were participated in this study. Permission to conduct human subjects in this study was approved by the Ethical Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University (COA No. 068/2013).

Data Collection

The participant-elderly were face to face interviewed on their behaviors, health status and housing environments.

Statistical calculation

All collected data was analyzed using the SPSS version 17.0 statistical software package. Descriptive analyzed of the behaviors, symptoms, housing environments and logistic regression was estimated the associations with health status with 95% confidence interval (CI). A statistically significant difference was accepted at a p-value of < 0.05 similar to the other medical studies.

RESULTS

Characteristics of elders

The mean age of elders was 69.3 years (30.6% were men and 69.4% were women). The mean weight was 60.9 Kg/m³ and

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Table 1: Characteristic and behavior of elderly in warrens

Parameter	Mean or N (%)	SD	Min-Max
Age (years)	69.31	7.75	60-97
Weight (kg)	60.9	11.6	33.7-111.6
Time resident (years)	42.1	18.9	0.25-90
Sex			
Men	133 (30.6)	-	-
Women	301(69.4)		
Education			
None	81 (18.7)		
Primary school	297 (68.4)		
Secondary school	41 (9.4)		
≥ Secondary school	15 (3.5)		
Cigarette smoking	34 (7.8)		
Alcohol drinking	36 (8.3)		
Exercise regularly	195 (44.9)		

Table 2: Health status, congenital diseases, symptoms of participate-elders (n=434)

Parameter	n	%
Health status		
Very good	2	0.5
Good	144	33.2
Moderate	191	44.0
Fair	82	18.9
Poor	15	3.5
Congenital disease	324	74.7
Hypertension	220	67.9
Diabetes	117	36.1
High-cholesterol	78	24.1
Bone disease	48	14.8
Heart disease	43	13.3
Allergy	20	4.3
Kidney disease	12	3.7
Symptoms in last 1 month	115	26.6
Respiratory symptoms	61	14.1
Cold	33	7.6
Coughing	24	5.5
Running nose	18	4.1
Throat irritation	10	2.3
Suffocate	8	1.8
Shortness of breath	8	1.8
Wheezing	2	0.2
Skin irritation	19	16.5
Rash	16	3.68
Dry and crack skin	7	1.6
Swelling	5	1.2
Spot skin	1	0.2
Non-specific symptoms	73	63.5
Dizziness	47	10.8
Headache	33	7.6
Fatigue	26	6.0
Moody	17	1.6
Vomiting	12	2.8
Conjunctivitis	3	0.7
Annual physical examination	299	68.9

Table 3: Housing environmental conditions of the participant-elders in community

Parameter	n	%
Nearby factory/garage	22	5.1
Have smoking in house	124	28.6
Have cooking in house	329	75.8
Have using incense and candle in house	271	62.4
Have using mosquito repellent and pesticide in house	177	40.8
Have using chemical compounds; bathroom cleaner, bleach	117	27.0
Have using air condition	154	35.5
Have using exhaust fan	62	14.3
Have painting house	214	49.3

Table 4: Association between health status and behaviors of participant-elders

Dependence Parameter	Prevalence (%)	Logistic regression model results		p value
		Odd ratio	95% CI	
Behavior				
Smoking	7.8	1.014	0.643-1.598	0.952
Alcohol drinking	8.3	0.635	0.384-1.052	0.078
Exercise	44.9	0.645	0.501-0.832	0.001

Independence variable: health status

Adjust for age, sex, weight, duration of living in community

Table 5: Association between health status and symptoms of participant-elders

Dependence Parameter	Prevalence (%)	Logistic regression model results		p value
		Odd ratio	95% CI	
Respiratory symptoms				
Cold	7.6	0.549	0.316-0.954	0.033
Coughing	5.5	0.754	0.416-1.370	0.354
Running nose	4.1	1.100	0.585-2.069	0.768
Throat irritation	2.3	3.147	1.230-8.052	0.017
Suffocate	1.8	1.771	0.643-4.878	0.269
Shortness of breath	1.8	1.925	0.666-5.564	0.227
Wheezing	0.2	7.232	0.447-116.880	0.163
Skin irritation				
Rash	3.7	0.932	0.491-1.770	0.830
Dry and crack skin	1.6	1.478	0.595-3.674	0.400
Swelling	1.2	0.965	0.830-1.121	0.640
Non-specific symptoms				
Dizziness	10.8	1.541	0.946-2.511	0.082
Headache	7.6	1.391	0.832-2.327	0.208
Fatigue	6.0	1.831	1.029-3.256	0.040
Vomiting	2.8	1.872	0.891-3.934	0.098
Moody	1.6	2.629	1.240-5.575	0.012
Conjunctivitis	0.7	0.928	0.133-6.487	0.940

Independence variable: health status

Adjust for age, sex, weight, duration of living in community

Table 6: Association between health status and housing environmental conditions of participant-elders

Dependence Parameter	Prevalence (%)	Logistic regression model results		<i>p</i> value
		Odd ratio	95% CI	
Nearby factory/garage	5.1	1.561	0.906-2.689	0.109
Have smoking in house	28.6	1.273	0.972-1.668	0.080
Have cooking in house	75.8	0.699	0.532-0.919	0.010
Have using incense and candle in house	62.4	1.015	0.796-1.295	0.904
Have using mosquito repellent and insecticide spraying in house	40.8	6.754	0.588-0.967	0.026
Have using chemical compounds; bathroom cleaner, bleach	27.0	0.835	0.641-1.088	0.182
Have using air condition	35.5	0.697	0.538-0.903	0.006
Have using exhaust fan	14.3			
Have painting house	49.3	0.891	0.702-1.132	0.346

Independence variable: health status

Adjust for age, sex, weight, duration of living in community

duration of living in community was 42.1 years. Data also revealed that 68.4% had primary school education, 8.3% alcohol drinking, 7.8 cigarette smoking and 44.9% exercise regularly (Table 1).

Health Status and Housing Environmental Conditions of Elders in warrens

Most health status of the participant-elders was 44% in moderate, 33.2% in good and 18.9% in fair condition, respectively. Congenital diseases recorded among them were, diabetes, high-cholesterol and bone disease at 67.9%, 36.1%, 24.1% and 14.8% respectively. Symptoms observed in the last one month were 63.5% non-systematic (63.5%), respiratory (14.1%) and skin irritation (4.4), respectively (Table 2). And 68.9% of participant-elders had annual physical examination.

The housing environmental conditions reported in this study were as followed: cooking in house (75.8%), using incense and candle in house (62.4%), living in painting house (49.3%), using mosquito repellent and insecticide spraying in house (40.8%) and using air condition (35.5%), respectively (Table 3).

Association between health status and behavior, symptoms and housing environment parameters

The health status of participant-elders showed significantly associated to exercise ($p<0.001$) (Table 4), respiratory symptoms of cold ($p<0.05$) and throat irritation ($p<0.05$) as well as non-specific symptoms of fatigue ($p<0.05$) and moody ($p<0.05$) (Table 5). In addition, the health status was associated to environmental parameters of cooking in house ($p=0.01$), using mosquito repellent and insecticide spraying in house ($p<0.05$) and using air condition ($p<0.01$) (Table 6).

DISCUSSION

The majority of participant-elders were married women of non-smoking, non-alcohol drinking and about half of them exercise regularly. Of those women, many of them were exposed to poverty, neglect and abuse. United Nations reported that Thai older women face other disadvantages relative to men as lower level of literacy, longer periods of widowhood, living alone with

significantly lower household income, higher levels of morbidity and disability and lower likelihood of receiving formal retirement benefits or social security support.^[4] Most of health status of participant-elders in this study found moderate (44%) to good (33%) which the congenital diseases recorded were hypertension, diabetes, high-cholesterol, bone disease and heart disease as previous study.^[5] The health status of them showed significant associated to exercise, cold, throat irritation, fatigue and moody. Poor health was high risk to respiratory symptoms of throat irritation 3.1 times and cold 0.5 times. Regarding the observed-symptoms, the non-specific symptoms were high in participant-elders with high risk of fatigue (1.8 times) and moody (2.6 times). Such symptoms were described as the sick building syndrome (SBS), which associated to indoor air quality.^[6] For the environmental conditions in the participant-elder's houses, our data found that there were significantly related to cooking, using mosquito repellent and pesticide and using air condition in house. In-house cooking using the Liquid Petroleum Gas (LPG) stove is common-practice in developing country. Although, it is clean burning and provides much greater efficiency than even the best improved biomass stoves, but it is also quite danger if since the LPG stove could emitted 15 times more carbon dioxide (CO₂) than wood and kerosene which is considered as an in-door air pollution,^[7] and if the small amount leaks it could be hazardous to the environment.^[8] Health care providers should be promoting the improvement of using stoves, as they are relatively low-cost and can be manufactured from local materials.^[9] The correlation between cooking in house and having non-specific symptoms (Pearson's correlation, $p=0.05$) which risk was 2.2 (95% CI= 0.985 to 5.091). Of the mortality from respiratory symptom related to indoor air pollution, WHO reported that more than 1 million people a year (54%) die from chronic obstructive respiratory disease (COPD), 44% from pneumonia, and only 2% from lung cancer.^[10] In general, women, as home makers, are more likely to develop the bronchitis from in-house cooking than from smoking. Our results showed that the prevalence of smoking in house 28.6% which had risk of their health status 1.3 times. Both women and men exposed to heavy indoor smoke are 2-3 times more likely to develop COPD.^[11] In comparison to the

household-uses of mosquito repellent and insecticide which had high risk of health status at 6.8 times. Chemical mosquito repellents are toxic against the skin (rashes, swelling, eye irritation) and nervous system (brain swelling in children, anaphylactic shock).^[12] The insecticide risks of absorbing through skin are also high, as well. Asthma and other respiratory complications are quite common as a result of inhaling the chemical insecticides. Skin and eye irritations, including itching and burning may also occurred.^[13] The insecticides also have been found to be carcinogenic, being linked to occurrences of leukemia as well as brain, lung, and other cancers.^[14-18] The preference of using air conditioning over the electric fan in poor ventilation showed its relationship to the health status. There is also evidence of links between indoor air pollution and low birth weight, TB (tuberculosis), ischaemic heart disease, nasopharyngeal and laryngeal cancers.^[11]

CONCLUSIONS

Most of health status of elderly persons in our studied-warrens was range from moderate to good with some congenital diseases recorded. Our results demonstrated that it was related to exercise, respiratory symptoms, non-specific symptoms (such as fatigue and moody) and indoor air pollution (from cooking, using mosquito repellent and insecticide and air condition). Elderly persons must be educated with knowledge of health care to reduce indoor air pollution exposure. In addition, health promotion by eco-friendly stoves and their exercises should be encouraged.

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