Health Behavior among Elderly in Huey Chinsri Municipal, Ratchaburi Province, Thailand

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ABSTRACT
The objectives of this study were examining the level of health behavior of elderly and identifying the relationship between demographics data (e.g., gender, age, income and comorbid diseases) and health behavior (e.g., dietary health behavior, exercise, self-care behavior and stress management) in elderly. In this cross-sectional study, the total of 160 elderly in Ratchaburi Province, Thailand was selected by quotation sampling with the method as probability free selection of the sample. Data were analyzed using frequency, percentage, mean, standard deviation and Chi Square test to examine the relationship between demographics data and health behavior in elderly. Findings showed the elderly had moderate level of health behavior score as 0.93 ± 0.43 (mean ± SD). Demographic data showed the relationship with dietary health behavior included gender (p = .005), age (p = .007), monthly income (p = .001), and underlying disease (p = .016). In summary, the health behavior of the elderly could be improved by promoting the dietary health behavior, exercising behavior, self-care behavior and stress management behavior. Moreover, according to the moderate level of health behavior observed, it is recommended that healthcare providers should be aware of the benefits of health promoting behaviors to slow down the deterioration of the elderly’s health, maintain good health and lead happiness in the rest of life.

INTRODUCTION
The demographic transition caused by advance medical technology and the healthcare system has resulted in lower mortality rate and increase the life expectancy. According to population estimation from 2007 to 2050, the global population of the elderly almost double, or by 2050 there will be more than 2 billion elderly worldwide.1 In Thailand, the number of elderly from 60 years or over was more than 11.3 million in 2017.2,3 Elderly in Thailand has increased much faster than other Asian countries, in spite of the fact that Japan encountered an elderly society before Thailand.4 Elderly affect the social, economy and employment conditions as well as the long-term allocation of health and social resources of the country.5 However, if Thailand has improperly planned for the elderly, it could make the elderly population burden on the country’s future expenses.5,6 However, well-being of elderly depend on many factors, both internal and external factors.6 Many studies in Thailand indicate that older people living in urban and rural areas still have different lifestyles and supporting factors. Therefore, the importance of elderly not only depends on change in the population structure or increasing life expectancy but also depends on health, quality of life and the care of older adults.9,10 The elderly should have better quality of life including the organization of medical and public health services.11 As well as providing basic social services, preventive care, sanitation, education and income security.12 These services should be provided in the family and community to enhance the health behavior and quality of life for the elderly as well as the basic services that should be received.13,14 Elderly undergoes physical, mental and social changes in the way of deterioration.15 These factors are risks and health problems. The health problems of elderly can be caused by behavior or environment, life style since childhood and heredity.16 Hence, elderly need wide range of health care and health promotion to reduce chronic illnesses, slow deterioration in health and maintain or increase the level of physiological function. Health-promoting behavior is an important factor in the maintenance of good health. According to Pender’s health-promoting model, individuals have the ability to learn, make decisions, solve problems and change behavior on their own.17 Therefore, the general population, including elderly, have the ability to take responsibility and promote their health. Several studies have shown that the health-promoting behaviors of elderly were not appropriate.18,19 In order to sufficiently promoting good health, elderly should be aware of the benefits of health promoting behaviors to slow down the deterioration of the elderly’s health, maintain good health, and lead to happiness in the rest of their life. According to the study, we aimed to determine the health behavior in elderly and also explored the relationship between demographics (gender, age, income and comorbid diseases) and health behavior (dietary health behavior, exercising behavior, self-care behavior, and stress management behavior) of elderly in Ratchaburi Province, Thailand.

METHODS
Study design
This study determined the health behavior in elderly as a descriptive cross-sectional study.

Population
The target population was the elderly, 60 years or over, both male and female. The population of 1,598 elderly, living in Huey Chinsri Municipal, Ratchaburi Province.

Sample size
The sample was sampling based on the criteria to estimate the sample size from the population. The sample size was calculated 10% of the total population in the thousands.
The researchers used quota sampling as a probability-free selection of the sample. Finally, the sample size was 160 participants.

**Measures**

The data was gathered in two parts. The first part was demographic data, which included gender, age, income and comorbid diseases. The second part was health behavior scale. We used these tools to identify dietary health behavior, exercising behavior, self-care behavior, and stress management behavior in elderly. It was a 29-item self-report questionnaire with three Likert-scale responses. The researchers reported a Cronbach’s alpha for each subscale included 0.78 for the dietary health behavior subscale, 0.76 for the exercising behavior subscale, 0.75 for the self-care behavior subscale, and 0.78 stress management behavior subscale were reported for a normative sample.

**Procedure**

The study was approved by institutional review boards from Suan Sunandha Rajabhat University (No. 1-012/2018). We performed recruitment, enrollment and data collection. The questionnaire described information about this study such as the objectives, data collection procedures, questionnaire details and the participants’ rights. After the participant signs the consent letter to be a volunteer, data were collected. The participants have their withdrawal rights to discontinue their participation at any time. The completeness and correctness of the questionnaire were examined. Then they were arranged, counted and processed.

**Data Analysis**

The SPSS version 22 was used for data analysis with statistically significant at P ≤ 0.05. (IBM Corporation, 2013). The descriptive statistic (percentage) was used for the demographic data (e.g., gender, age, income and comorbid diseases). The means and standard deviation (SD) were used for analyzing the health behavior (e.g., dietary health behavior, exercising behavior, self-care behavior, and stress management behavior. Chi Square test was used to explore the relationship between demographic data and health behavior.

**RESULTS**

**Sample Characteristics**

The data were collected in all the sample without data lost. (n = 160) Most of them were female (n = 116, 72.5%), the majority age ranging was 70 – 79 years old (n = 62, 38.75%). Most of the participants had monthly income < 160 US Dollar. The underlying disease was the majority group (n = 131, 82.1%) as diabetes (n = 45, 28.1%), hypertension (n = 15, 9.4%) and comorbid diseases (n = 45, 28.3%) (see Table 1). Small group of 17.9% had no underlying disease.

<table>
<thead>
<tr>
<th>Demographic Data</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>116</td>
<td>72.5</td>
</tr>
<tr>
<td>Male</td>
<td>44</td>
<td>27.5</td>
</tr>
<tr>
<td><strong>Age (year)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 - 69</td>
<td>52</td>
<td>32.5</td>
</tr>
<tr>
<td>70 - 79</td>
<td>62</td>
<td>38.75</td>
</tr>
<tr>
<td>&gt; 80</td>
<td>46</td>
<td>28.75</td>
</tr>
<tr>
<td><strong>Monthly Income (US Dollar)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 160</td>
<td>154</td>
<td>96.3</td>
</tr>
<tr>
<td>161 - 320</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>&gt; 321</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>No underlying disease</strong></td>
<td>29</td>
<td>17.9</td>
</tr>
<tr>
<td><strong>Underlying disease</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>45</td>
<td>28.1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>15</td>
<td>9.4</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>14</td>
<td>8.8</td>
</tr>
<tr>
<td>Kidney disease</td>
<td>12</td>
<td>7.5</td>
</tr>
<tr>
<td>≥ 2 Diseases</td>
<td>45</td>
<td>28.3</td>
</tr>
</tbody>
</table>

**Health Behavior in Elderly**

Respondents had moderate level of health behavior score as 0.93 ± 0.43 (Mean ± SD). When considering in each component of health behavior, dietary health behavior scored 1.13 ± 0.40 (Mean ± SD), exercising behavior scored 0.74 ± 0.50 (Mean ± SD), self-care behavior scored 0.94 ± 0.40 (Mean ± SD) and stress management behavior scored 0.79 ± 0.42 (Mean ± SD) (Table 2).

<table>
<thead>
<tr>
<th>Health Behavior</th>
<th>Mean</th>
<th>SD</th>
<th>Interpretation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietary health behavior</td>
<td>1.13</td>
<td>0.40</td>
<td>Moderate</td>
</tr>
<tr>
<td>Exercising behavior</td>
<td>0.74</td>
<td>0.50</td>
<td>Moderate</td>
</tr>
<tr>
<td>Self-care behavior</td>
<td>0.94</td>
<td>0.40</td>
<td>Moderate</td>
</tr>
<tr>
<td>Stress management behavior</td>
<td>0.79</td>
<td>0.42</td>
<td>Moderate</td>
</tr>
<tr>
<td>Overall</td>
<td>0.90</td>
<td>0.43</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Considering each aspect of dietary health behavior, the participants had moderate level of health behavior score (X = 1.13). When analyzing each item, the good level was eating three meals a day (X = 1.94), followed by eating newly cooked food (X = 1.85) and eating fruits and vegetables (X = 1.43). The moderate level was daily drinking 6-8 glasses of clean water (X = 1.14), protein consumption such as meat, nuts, and milk (X = 1.10) and eating well done foods (X = 1.05). In addition, the low-level score was dislike eating salty food (X = 0.39) and not eating crunchy snacks (X = 0.13).

This study indicated that exercise health behavior was at a moderate level (X = 0.74). When analyzed by each analysis, we found that muscle exercises with arm swing, leg swing, wrist flexion, ankle stiffness (X = 1.01), followed by selecting the type of exercise appropriate to the health condition and age of the elderly (X = 0.99) and walking or cycling a short distance (X = 0.90) were in medium level, respectively. Meanwhile activities such as gardening, housework, planting trees, watering the plants, etc. (X = 0.59), exercising at least 3 times a week and 20-30 minutes or more each time (X = 0.22) were low-level, respectively. Self-care behavior was at moderate level (X = 0.94). When analyzing each case, we found that receiving a physical examination and annual disease screening (X = 1.41), following by visiting care personnel when sick (X = 1.16), the rights to reach medical service under their government social security (X = 1.13) following doctor’s advice (X = 1.06) and pharmacist consultation when in doubt with prescription (X = 1.06) as the moderate level with prescription (X = 1.06).

Table 3. Descriptive and Correlational Analysis of Demographic Data and Health Behavior

<table>
<thead>
<tr>
<th>Variables</th>
<th>Gender</th>
<th>Age</th>
<th>Monthly Income</th>
<th>U/D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietary health behavior</td>
<td>.005**</td>
<td>.007**</td>
<td>.001**</td>
<td>.016*</td>
</tr>
<tr>
<td>Exercising behavior</td>
<td>.074</td>
<td>.054</td>
<td>.644</td>
<td>.153</td>
</tr>
<tr>
<td>Self-care behavior</td>
<td>.303</td>
<td>.010*</td>
<td>.867</td>
<td>.241</td>
</tr>
<tr>
<td>Stress management behavior</td>
<td>.630</td>
<td>.075</td>
<td>.966</td>
<td>.122</td>
</tr>
</tbody>
</table>

Note: U/D = Underlying Disease, * p < value .05, ** p < value .01

**DISCUSSION**

The objective of the study was identifying health behavior in elderly in Huey Chinsri Municipal, Ratchaburi Province. Indeed, the findings indicated the participants had health behavior at moderate level (X = 0.90). The result is similar to Konkaew,20 who conducted health behavior in elderly people in the municipal of Khlong Tamru Sub-district, Muang District, Chonburi Province, which shows that the participants had health behavior at moderate level. The finding of this study is closely related to several studies, which showed that most of elderly had health behavior in moderate level.19,21,22 This may be because the majority of the elderly have some knowledge of self-care, which is consistent with Pender et al.23 that people apply knowledge to use and cause behavioral change. When knowledge is abundant, it will be resulted in the better health behavior of the elderly people. Considering dietary health behavior aspect, we found that elderly had moderate level scored as 1.13 ± 0.40 (Mean ± SD). This finding consistent with previous studies reporting that dietary health behavior in elderly people had moderate level scored.20,24 However, the results of this study contrast with Muangmool et al.,25 and Pinthong et al,26 which showed that elderly people had dietary behavior in good level. This may be because different scoring criteria lead to different levels of research results. Regrading exercise health behavior; the score was in moderate level. This result is consistent with previous studies.20,25,27 However, some indicated that exercise health behavior was at poor level.26,28 In addition, some research reported the exercise health behavior was at high level score.29 This may be due to different attitudes and values in the exercise of the elderly sample group that make exercise health habits different. Self-care behaviors in illness, we found moderate level score of self-care behaviors in illness. The finding is inconsistent with Konkaew,20 which shows that the self-care behaviors in elderly people were scored in moderate level. This may be because the elderly sample did not have awareness of their own health care, thus causing the behavioral health behavior in the illness. Indeed, the self-care behavior in illness had poor level score, different self-awareness of their health care results in different self-care behaviors in illnesses. The analysis of stress management behavior, the elderly had stress management behavior at moderate level score. This is consistent with the study of Konkaew.20 However, the study does not consistent with some studies who found that stress management behaviors in elderly was in poor level.26 May be the sample group of elderly had different family background that make different personality and ways of life to manage stress or problem arises. Indeed, they do not meet or talk with friends or anyone. They may relax themselves by praying singing, listening to the radio and reading books, etc.

The second objective of the study is to explore relationship between demographics data (gender, age,
The study contributes relevant information to understanding the development of health behaviors in elderly. We indicated that dietary health behavior, gender, age, monthly income and underlying disease were associated with dietary health behaviors in elderly. Therefore, the study can be used as a reference to encourage and promote healthy behavior, and also improve self-care in elderly. In addition, healthcare providers should be aware of the health promoting behaviors to slow down the deterioration of the elderly’s health, maintain good health, and lead happiness in the rest of their life.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

REFERENCES


