THE ASSOCIATION BETWEEN THE PERCEPTION OF AGE-FRIENDLY CITY FEATURES AND THE MENTAL HEALTH STATUS OF THE ELDERLY IN PHOTARAM DISTRICT, RATCHABURI PROVINCE, THAILAND

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ABSTRACT:

Background: Since the growth of the elderly population has been continuously increasing, the World Health Organization proposed the concept of the age-friendly city in 2007 as a response to the aging society with an aim for healthy lives among the elderly. This study aimed to learn about demographic characteristics and association between the perception of the age-friendly city and the mental health status of the elderly in Photaram district, Ratchaburi province, Thailand.

Methods: A cross-sectional research design was conducted. Respondents were 432 elderly people both male and female, the ages between 60-79 years. The data collection tool was a face-to-face interview questionnaire. The interview questions were divided into three parts: demographic characteristics, the perception toward the age-friendly city, and the mental health status of the elderly. Descriptive statistics were used to analyze general characteristics information; and Chi-square was employed to test association among variables.

Results: The study indicated that the level of the perception toward the age-friendly city was moderate level in all components, which was also true for the mental health status. For the association, it was found that the level of education, income, and chronic diseases were associated with the mental health status of the elderly. The statistical significance was ($p < 0.05$). The perception toward the age-friendly city in all components was associated with the mental health status of the elderly with a statistical significance of ($p < 0.05$). Other statistically significant findings were: outdoor space and building ($p=0.014$), transportation ($p=0.05$), housing ($p=0.012$), social participation ($p=0.008$), respect and social inclusion ($p=0.008$), civil participation and employment ($p=0.030$), communication and information ($p=0.002$), as well as community support and health service ($p=0.015$).

Conclusion: The results of this study could help in planning for the development of an age-friendly city in the future in Photaram district, Ratchaburi province, Thailand.

Keywords: Age-friendly city; Elderly and mental health; Thailand

INTRODUCTION

The aging population is expected to increase 56 percent from 2015 to 2030. The number has increased approximately from 901 million to 1.4 billion. The number of the people aged 80 years or over is also rising quicker than the number of older people overall. The worldwide picture in 2000 to 2015 showed that the number of people aged 60 years or over has risen 68 percent in urban areas and 25 percent in rural areas [1]. In Thailand, the percentage of elderly will gradually increase from 13.2 in 2010 to 32.1 in 2040. The people aged 80 or over will become 12.7 percent of the total elderly population.

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From the predictions, the elderly population will grow in urban areas from 39.7 percent in 2010 to 59.8 percent in 2040, approximately from 3.3 million people to 11.6 million people [2].

In terms of mental health, over 20 percent of elderly in the world have suffered from a mental or neurological disorder; and 6.6 percent of all disabilities (disability adjusted life years-DALYs) among people over 60 are attributed to neurological and mental disorders. The most common neuropsychiatric disorders in this group have been dementia and depression. Many elderly have lost their ability to live independently because of limited mobility, chronic pain, frailty or other mental or physical problems. Furthermore, they required some form of long-term care. Similarly, the elderly have suffered sadness in the results of retirement and disability. According to this problem, the challenge of health provider will be to train health workforce to care for the elderly, to prevent and manage age-associated chronic disease including mental problems, to design sustainable policies on long-term and palliative care, and to develop age-friendly services and settings in order to support the elderly to live longer [3].

The World Health Organization generated the Age Friendly City concept to raise the chances for good health, for active participation and for security in the lives of the elderly with 8 domains. The domains were Outdoor Spaces and Buildings, Transportation, Housing, Social Participation, Respect and Social Inclusion, Civic Participation and Employment, Communication and Information, and Community and Health Services [4]. Photaram district in Ratchaburi province, Thailand, was one of the places that provided the features for the elderly with the age-friendly city concept. The proportion of elderly in Photaram district was 15.51 percent. It meant that this area was the Aging Society. This study aimed to describe the association between the perceptions toward AFC features with the mental health status among the elderly in Photaram district, Ratchaburi province, Thailand.

METHODOLOGY

This study used a cross-sectional study design to describe the perception toward age-friendly city features and mental health status in the elderly at Photaram district, Ratchaburi province, Thailand. The study area is located in Photaram district, Ratchaburi province, Thailand. The participants of this study were people aged 60-79 years, both male and female living in Photaram district, Ratchaburi province more than 6 months. The exclusion criteria were the participants who had hearing loss, were bedridden, and had cognitive and dementia impairment based on a doctor's diagnosis. The pattern of collecting data was the "Face-to-Face interview". This study was approved by the Ethical Review Committee for Research Involving Human Research Subjects of the Health Sciences Group at Chulalongkorn University (COA no. 067.1/60).

The sample size of this study was 392 people from 19,196 of the population, plus 10% in case of non-response or non-complete response. Thus, the final sample size was 432 people from the total. The sampling technique in this study was the multi sampling. Researcher separated each sub-district and calculated the population. Then, the proportion to size technique was used to find the representative population from each sub-district by using the population size of 432 people aged 60-79 years as participants. Finally, simple random sampling technique was used to select the first participants of each sub-district. The researcher selected the rest of the participants by the interval technique such as in the Don Krabueang sub-district. The total population was 599 people; and the target population was 16 people. The total population was divided with the target population; (599/16) therefore, the interval of this group was 38. Every 38 people were counted after the first participants from simple random sampling technique.

There were 3 parts in the questionnaires in this study: the demographic characteristics including 4 questions; the perception toward age-friendly city features including 39 questions [4], and mental health including 56 questions [5]. The perception toward age-friendly city features was developed from the WHO Age Friendly City Checklist [4]; and it was approved for content validity and checked by 4 experts. The research was sent out for 30 sets of questionnaires at Banphong sub-district, Banphong district, Ratchaburi province, Thailand. The sample size was both male and female people aged 60-79 years. The Cronbach's Alpha of more than 0.7 indicated the reliability of the questionnaires.

The descriptive statistic and chi-square were used for analysis in this research. The descriptive statistic was used to analyze frequency, percentage, maximum, minimum, mean, and standard deviation. Chi-square test was used as the inferential statistics to test the association between the perceptions toward age-friendly city features and mental health

Table 1 The association of the demographic characteristic with the mental health status

	Gender	Age	Education background	Income	Medical condition
Mental Health status	0.242	0.195	0.000*	0.000*	0.007*

*p<0.05

Table 2 The association of the perception toward the domain of the age-friendly city with the mental health status

Mental health status	p-value
1) Outdoor spaces and buildings	0.014*
2) Transportation	0.005*
3) Housing	0.012*
4) Social participation	0.008*
5) Respect and social inclusion	0.008*
6) Civic participation and employment	0.030*
7) Communication and information	0.002*
8) Community support and health service	0.015*
9) All of domains	0.000*

*p<0.05

status, as well as to describe the association between demographic characteristic with mental health status in the elderly.

RESULTS

The data of the demographic characteristics showed 64.1% of the participants were female and 35.9% were male. The mean of age was 66.94 years old; standard deviation was 6.055 years; maximum was 79 years; and minimum was 60 years old. 68.3% of the participants were aged 60-79; and 31.7% were aged 70-79. 44.9% of participants graduated from primary school. Meanwhile, the monthly income of most of them (54.4%) was less than 5,000 baht. Also, 61.1% of the participants had medical conditions.

The perception towards all of the domains of the age-friendly city features were grouped into three levels: good, fair and poor. As a result, all the domains had a fair level as a majority score. Moreover, the researcher did the calculation of each individual; and it gave the fair level outcome. On the other hand, the mental health status had a high level in the moderate group with 38.9%, followed by poor with 30.8%, and good with 30.3%.

Table 1, there were three variables of the demographic characteristic that had a significant association with the mental health status – education background (p = 0.000), income (p = 0.000), and medical condition (p = 0.007).

Table 2, the perception of participants toward the domain of age-friendly city features had a significant association with the mental health status in the following domains: outdoor spaces and buildings (p=0.014), transportation (p=0.005), housing (p=0.012), social participation (p=0.008), respect and social inclusion (p=0.008), civic participation and employment (p=0.030), communication and information (p=0.002), community support and health service (p=0.015) and all of the domain of the age-friendly city (p=0.000).

DISCUSSION

The demographic characteristic showed that the elderly in Photaram district, Ratchaburi province had financial problems; this might be due to their educational background. Similarly, one previous study in Spain that presented a higher education level amplified significantly the inverse association between income and disability in the Spanish elderly [6]. Concerning the medical conditions that linked the data from observation and interview, the elderly didn't have homemade food because some of them mentioned they were still working, so they didn't have time to cook food; and some elderly mentioned that cooking by themselves was more expensive than buying outside food.

The perception towards age-friendly city features showed the differences from the study in Busan Metropolitan City, South Korea. In Busan, the study showed that the elderly perceived the highest domain was outdoor spaces and buildings, while in this study the highest was respect and social inclusion [7], Table 3.

The contrast between Photaram district, Thailand and Busan Metropolitan City, South Korea can be explained by the data from interviewing; for example, the community had culture day (Thai New Year) which represented paying respect to

Table 3 The comparison of the perception toward the age-friendly city in Photaram district, Thailand and Busan Metropolitan City, South Korea

Rank	Photaram district	Busan metropolitan city
1	Respect and social inclusion	Outdoor spaces and buildings
2	Civic participation and employment	Transportation
3	Community support and health service	Community support and health service
4	Communication and information	Housing
5	Transportation	Respect and social inclusion
6	Social participation	Communication and information
7	Outdoor spaces and buildings	Social participation
8	Housing	Civic participation and employment

older adults. Moreover, the projects increased the chance of elderly to join after retirement, as some of them came to be the head of a club or a leader in the community. Also the community had the club that taught the elderly to make some products to sell. For housing, the elderly perceived and requested their member family to improve their house with the age-friendly city feature; and the households adapted the local wisdom to create the age-friendly city. However, the process of installing the features was without expert suggestions, so they were not safe and secure.

The mental health status showed 80% of the participants answered agree and strongly agree when the question asked about boredom, disappointment, distress and worry. The result showed the elderly in the good group had better problem management than the moderate group and poor group.

The association between the demographic characteristics and the mental health status showed there were three significant associations with the mental health status: education background (p = 0.000), income (p = 0.000) and medical condition (p = 0.007). The education background showed the similarity with the previous study that the elderly who had high level of the education had mental health status in good level more than poor level because they had skills to control their emotions when facing the unexpected situation [8]. The income showed the elderly who had high income had good mental health status more than low income. The previous study showed that income was the factor that affected the different level of mental health. The statistical significance was at the 0.05 level. The elderly in the group of high income had good mental health compared to the elderly with no income [9]. The medical condition showed the elderly who had a medical condition had a poor mental health status compared to the group without. This related to The National Institute of Mental Health (2016) which claimed that people with other

chronic medical conditions, such as diabetes hypertension and cardiovascular disease had a higher risk of depression; as well as people with depression had an increased risk of cardiovascular disease, diabetes, stroke, and Alzheimer's disease [10].

The association between the perception toward age friendly city features and mental health status showed that a statistically significant association was found in all of the domains: domain 1 outdoor spaces and buildings (p = 0.014), domain 2 transportation (p = 0.005), domain 3 housing (p = 0.012), domain 4 social participation (p = 0.008), domain 5 respect and social inclusion (p = 0.008), domain 6 civic participation and employment (p = 0.030), domain 7 communication and information (p = 0.002), and domain 8 community support and health service (p = 0.015). Similarly, in a previous study in Malaysia, the transportation and housing domain was known as the most important feature of age-friendly. The transportation and housing enabled the elderly to participate in local community social events, exercise in parks, receive adequate healthcare, and visit family and friends; in which it would help promoting social connectedness and participation. Also, outdoor spaces and buildings played an important role in the adaptability of adults in their living environment. Safe outdoor spaces equipped with the appropriate facilities helped easing the mobility of adults, especially older adults. The community support and health services domain was perceived as another significant age-friendly feature. It served as a proactive intervention in light of increasing healthcare costs resulting from poor health and chronic diseases among aging people. These findings were strongly in line with the need to reform in the local healthcare system. It is worth noting that the other four domains of the age-friendly features were perceived to be not significant in the Malaysian context. They were respect and social inclusion, social participation, civic participation and employment, and communication and information [11]. Even though

the study in Malaysia didn't have a significant association in respect and social inclusion, social participation, civic participation and employment, and communication and information, a previous study showed that the domain of respect and social inclusion related to the mental health status because social inclusion was a powerful determinant of mental health and well-being. Evidence showed that belonging to a social network acted as a buffer against stress, promoted positive mental health and supported healthy behavior patterns. Supportive relationships helped people feel cared for, loved, esteemed and valued [12]. The domain of social participation was related with the study in Iran. It showed the mental health status of the elderly in Iran was significantly associated with social participation. (P = 0.01, r = 0.54) [13]. Civic participation and employment that brought social work and volunteers for the elderly decreased the social isolation of the elderly and increased the satisfaction in life [14]. Communication and information showed that good information was a great tool to keep the elderly connected [14]; for instance, if they don't understand things, they will have stress and fade away from social participation [4].

CONCLUSION

Most of the participants were female. The participants were in the early and middle stage of the elderly; so that the people had better movement than the older stage. About 44.9% had a primary school background; and 19.2% didn't have a chance to study. While the cost of daily life expense has increased, 54.4% of them had a monthly income less than 5,000 baht per month. For the perception toward age-friendly city feature, the participants were in fair level in all the domains; as well as the mental health status was in the moderate level. However, 30% of participant's mental health was in the poor level. It will be the challenge of the community to solve this problem in the future.

Moreover, the demographic characteristics data (education background, income and medical condition) were significantly associated with the mental health status (p < 0.05). It confirmed the first hypothesis of this study that there was an association between the demographic data and the mental health status of the elderly.

Lastly, the perception toward age-friendly city features (outdoor space and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, community and

health services) were significantly associated with the mental health status (p < 0.05). This result also confirmed the second hypothesis that there was an association between the perception toward age-friendly city features and mental health status in the elderly.

LIMITATION

There were four limitations to this study. First, the number of the elderly was not up to date. The sample size calculated from the last available data on the elderly population by the Ministry of Social Development and Human Security was recorded in 2012. Now, the population structure in Thailand has increased among people aged 60 or over from 13.2 percent in 2010 to 32.1 percent in 2040 [2].

Second, there were 19 sub-districts in Photaram district, but in the process of data collection the researcher wasn't able to cover all of the sub-districts. It was because two sub-districts, Photaram and Chet Samian, didn't have the District Health Promoting Hospital. Therefore, it didn't have the Village Health Volunteer to bring the researcher to the community.

Third, the sample size came from the population in Photaram district, Ratchaburi province; therefore, the result could not support the plans or projects in Ratchaburi province as a whole.

Fourth, this study just described the perception toward age-friendly city features. This wasn't an assessment.

RECOMMENDATION
Suggestion for applications of the research

There are five suggestions for applications of this study. Therefore;

First, the perception toward all domains of age-friendly city features were significantly associated with mental health status (p < 0.05). This can be the information for supporting the age-friendly city's policy implementation in this area because age-friendly city concept can improve and protect the mental health problems in the elderly.

Second, some of elderly try to apply the local wisdom with the age friendly city features, but they have to make sure that the features work. The health staffs or the local government need to bring in the expert to be involved with this development. Also, information is needed to support the process of implementing the age-friendly city policy.

Third, some of elderly were in a poor level of mental health status; so the health staff and village health volunteers can help to screen them again when they come to the District Health Promoting

Hospital. In addition, they can create a program such as matching the elderly with children to let them have some conversation and to take care of each other so that the elderly will not be lonely. And, as a result, the elderly will receive the respect from that child [15] Also, the health staffs can promote managing the problem when meeting the elderly.

Fourth, the result of this study showed 61.1% of the participants had a medical condition. Moreover from the observation, the researcher regconized that many elders showed a lack of concern about their diet. Therefore, it will be helpful if the health staff can promote how to be healthy by having a good diet.

Fifth, the data from interview showed that some of the locations to access the public transportation in the community were not secure. Therefore, it would be great if the health staffs and the local government considered this information to find the solution to this problem in the community.

Suggestion for future study

There are two suggestions for future study. Therefore;

First, to study and compare the perception of the staff in health centers and local government toward age-friendly city feature in a place that uses a model of an age-friendly city, for example Pattaya City or Nonthaburi province [16]. The age-friendly feature was in the process of an action policy in Thailand in 2016 for the active aging society; the comparison should be made in order to improve the development in the particular area [17].

Second, to find the association of the perception toward age-friendly city with the quality of life because this concept was created to increase the daily activity of the elderly and to support them to live a long life [4].

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