Arch AHS

ORIGINAL ARTICLE

Archives of Allied Health Sciences 2021; 33(2): 56-65.

Urbanized elderly's requirements for Physical Therapy Clinic

Raoyrin Chanavirut[1*], Saowanee Nakmareong[1], Wanida Donpunha[1], Saowanee Luangaram[2], Chavis Ketkaew[3], Ponlapat Yonglitthipagon[1]

[1] School of Physical Therapy, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen, Thailand.
[2] Department of Physical Therapy, Faculty of Allied Health Sciences, Naresuan University, Phitsanulok, Thailand.
[3] International College, Khon Kaen University, Khon Kaen, Thailand.

KEYWORDS
Physical therapy;
Elderly;
Requirement;
Clinic.

ABSTRACT
Although aging society is one of the major problems in Thailand today, this also marks a great opportunity for physical therapy to play a role in the transition of Thai society. The present study aimed to identify the requirements of the elderly who undergo physical therapy treatment at a clinic in the Khon Kaen District, Thailand. Understanding their requirements will be useful in renovating the physical environment and managing the treatment pattern to serve their needs. A total of 127 elderly people were recruited into the study, which was conducted between July 2017 and June 2018. After using a self-administered questionnaire as the study tool, the collected data were analyzed through descriptive statistics. The results revealed that almost all the volunteers were classified as young-old elderly. About 73% of the participants had underlying diseases, of which hypertension was the most common. In addition, the volunteers required a clinic located in a convenient place. Furthermore, they also required facilities with certain features, such as ramps, handrails, and elderly toilets, along with professional therapists and equipment. In conclusion, for the early phase of the aging society, Physical Therapy Clinic should provide suitable physical environment to support the diminishing physical ability of the elderly. Caregiver service while receiving treatment should be provided for the middle-old elderly. Additionally, for the old-old elderly, the transfer service between the residence and the clinic should be offered. Finally, in order to provide the most appropriate assessment and treatment, the geriatric physical therapist should be hired and the sufficient equipment should be provided for the elderly.

* **Corresponding author:** Raoyrin Chanavirut, PT, PhD. School of Physical Therapy, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen, Thailand 40002. E-mail: raocha@kku.ac.th
Received: 8 March 2021/ Revised: 20 April 2021/ Accepted: 24 May 2021

Introduction

In Thailand, the elderly person is someone whose chronological age is 60 years or older[1]. A 2019 report on the Thai elderly estimated that Thailand will become a full-fledged aging society by 2021, as the number of citizens aged 60 or older is expected to increase to 13.1 million, or 20%, of the total population[2]. By the end of 2020, the top five provinces with the highest number of elderly people in Thailand included Bangkok (19.83%), Nakhon Ratchasima (17.98%), Chiang Mai (19.60%), Khon Kaen (18.16%), and Ubon Ratchathani (15.48%), respectively[3]. A study conducted in Thailand reported that at the age of 60, males and females could expect to live, on average, a further 19.1 and 22.6 years, respectively. In addition, the study also indicated that Thai males could expect to spend an average of 18.6 years free from activities of daily living (ADL) disability and the least number of 11.6 years free from instrumental activities of daily living (IADL). For elderly Thai females, who have longer total life expectancy, the average years that they are ADL disability-free and the least number of IADL years are 21.7 and 8.1, respectively[4].

The major problems of the elderly are related to biological aging and the resulting decline in functional capacities. The common diseases among the Thai elderly include musculoskeletal, respiratory, and cardiovascular diseases[5]. Meanwhile, the most prevalent health-related complaints from the elderly have to do with their limited mobility (57.8%), and it has been shown that such complaints tend to increase with age[6]. In order to support age-related health problems, both the government sector (e.g., hospitals or centers of geriatric medicine) and the private sector (e.g., residential homes, elderly hospitals, nursing homes, and home health care services) serve the elderly[5,7,8]. In accordance with this fact together with the nation current situation, there is a tremendous opportunity for physical therapy to play an important role in Thailand's transition into an aging society. In Khon Kaen district, there are 2 public and 3 private hospitals that provide physical therapy services and 6 Physical Therapy Clinics. As known before, Physical therapy council requests the clinic must provide some standard physical environment (e.g. location, usable area, toilet) and treatment equipment (e.g. ultrasonic therapy machine, electrical stimulator, electric traction machine, and hydrocollator unit)[9]. However, the standard requirements for geriatric clinic has not been addressed.

In previous study, the United Nations Population Fund (UNFPA) reported some characteristics between the urban and the rural elderly[10]. It indicated that urban elderly were more educated, more literate and also had more average incomes than the counterparts. They also tended to living in single family style[10]. In addition, as mentioned earlier, Khon Kaen is one of the top five provinces with the highest number of elderly people in Thailand[3]. The year 2021 database report that Khon Kaen province had 291,875 elderly people in which 61,550 elderly lived in the urban area, the Khon Kaen district[11]. Thus, based on this fact, it may influence their requirement when using health services. Therefore, the present study was conducted to identify the requirements of the elderly who undergo physical therapy treatment at a clinic in the Khon Kaen District, Thailand. Understanding these requirements will be useful in planning and renovating the physical environment and managing the treatment pattern and services that can best cater to the needs of the urbanized elderly in the future.

Materials and methods

This study is a descriptive research conducted between July 2017 and June 2018. It was approved by the Khon Kaen University Ethic Committee (HE602176).

Subjects

The elderly aged 60 years and above who visited the Physical Therapy Clinic at the Khon Kaen University Community Outreach Center (KKUCOMOC) for treatment and rehabilitation were invited to join the study. All of them were able to understand verbal communication, read and write Thai, and expressed willingness to participate in the study. At the beginning, 140

elderly people were willing to participate; however, due to much missing information from 13 volunteers, the data analysis was based on a final sample of 127 participants.

Study tool

The study tool was a self-administered questionnaire on the elderly's requirements from an urbanized Physical Therapy Clinic. The questionnaire was based on information from the Ministerial regulations prescribing building facilities for the disabled or handicapped and the elderly[12] and was designed to gather empirical data. It consisted of three sections. The first section consisted of 10 questions that dealt with personal information, including age, gender, marital status, educational level, accommodation characteristics, medical treatment rights, and underlying diseases. The second section was separated into three parts to acquire information about the clinic location and facilities (10 questions), the appointment reminder and transfer assistance service (three questions), and the treatment quality (six questions). The last section enjoined the participants to include their additional suggestions and comments.

For the second section, each elderly person was asked to give opinions evaluating their requirements using a five-point Likert scale ranging from 1 ("least require") to 5 ("strongly require"). In addition, the questionnaire quality was evaluated and the three aspects were focused. Firstly, the content validity was evaluated by content validity index method from three physical therapy professionals. Secondly, the pilot test was conducted in 10 volunteers to assess how well the questionnaire captured the constructs. It was supposed to measure and test the participants' comprehension of the questionnaire items. Lastly, the reliability of each questionnaire item was assessed by calculating the Cronbach's alpha coefficient. In statistical method, the coefficient of Cronbach's alpha and range of reliability interpretation were interpreted as > 0.9 (excellent), 0.85-0.90 (very good), 0.8-0.84 (good), 0.75-0.79 (quite good), 0.70-0.74 (fair) and <0.70 (questionable)[13]. The result of the reliability test in this study was 0.873, which meant that the questionnaire was reliable as an instrument for data collection.

Study procedure

On the day of data collection, the researcher clarified the objectives, benefits, and procedures of the study to the volunteers. Then, the questionnaire was distributed and collected within seven days by asking each participant to drop off their completed questionnaires into the designated return box. Next, the researcher verified the questionnaires in terms of the accuracy and the completeness of the information provided. Then, the answers from 127 out of 140 completed questionnaires were analyzed, representing a response rate of 90%. The results were reported in numbers and percentages of volunteers.

Statistical analysis

The coefficient of Cronbach's alpha was performed with SPSS program version 23 software. In addition, after data collection, the information was verified for the accuracy. Then the data were analyzed and presented as numbers and percentages.

Results

Personal information about the volunteers can be found in Table 1. The data from the first section of the questionnaire indicated that there were more females than males who participated in the study. In terms of the age, the highest number of volunteers were in the 60 to 69-year-old age group. The volunteers showed a diverse range of marital statuses, with married people having the highest proportion among the sample. For the educational level, about 38% of the volunteers had lower than bachelor's degree qualifications. Additionally, government/state enterprise officer was the highest contributing treatment right among the volunteers.

The volunteers' main underlying diseases included hypertension, musculoskeletal disease, cardiovascular disease, and diabetes mellitus. Other underlying diseases were allergies, thyroid disease, gastro-esophageal reflux disease, benign prostatic hyperplasia, and renal disease. Among the volunteers, the major income source was

their pension, and the average medical expenses per month was less than 300 USD for 82% of all volunteers.

Table 2 presents the requirements identified by the elderly while undergoing treatment at the Physical Therapy Clinic. The results revealed that they required a clinic that was conveniently located for easier travel and was designed with a physical environment that was suitable for the elderly. The results from the appointment reminder and transfer assistance service part indicated that the appointment service was the highest requirement among the elderly, followed by caregiver and transfer services. In addition, the result from the treatment quality part indicated that aside from the physical therapist performance, the number and the quality of modern therapy equipment were among the most required by the elderly. These were followed by 1) the staff characteristics; 2) fast, convenient, and equitable service; 3) services that correlate the clinic's announcements; and 4) a channel through which service complaints can be made.

Finally, some interesting insights were obtained from the section on additional suggestions and comments. For example, some volunteers indicated that the clinic should provide non-slip shoes that fit perfectly with their feet. Another volunteer commented that the clinic should provide a security guard who can facilitate parking services and assist the elderly as they get on or off their vehicles.

Table 1 General characteristics of the volunteers (n=127)

Characteristics	Volunteers, n (%)
Gender	
Male : Female	35 : 92 (28% : 72%)
Age (years)	
60–69	87 (68%)
70–79	33 (26%)
80 and over	7 (6%)
Status	
Single	20 (16%)
Married	77 (61%)
Divorce	10 (7%)
Widowed	20 (16%)
Level of education	
Lower than bachelor's	48 (38%)
Bachelor	36 (28%)
Higher than bachelor's	43 (34%)
Living arrangement	
Living alone	16 (13%)
Living with spouse	64 (50%)
Living with son or daughter	32 (25%)
Living with relatives	15 (12%)
Primary caregiver	
No caregiver	14 (11%)
Spouse	47 (37%)
Son or daughter	43 (34%)
Relative	23 (18%)

Table 1 General characteristics of the volunteers (n=127) (cont.)

Characteristics	Volunteers, n (%)
Treatment right	
Self-payment	10 (8%)
Universal health care	7 (5%)
Social security scheme and workmen's compensation fund	2 (2%)
Government/state enterprise officer	108 (85%)
Underlying disease#	
No underlying disease	34 (27%)
Diabetes mellitus	8
Hypertension	38
Cardiovascular disease	12
Musculoskeletal disease	16
Others	39
Income source	
Pension	75 (59%)
Private business	28 (22%)
Other	24 (19%)
Average medical expenses per month	
Less than 300 USD	105 (82%)
300–599 USD	19 (15%)
600–899 USD	2 (2%)
900–1,199 USD	0 (0%)
Over 1,200 USD	1 (1%)

Note: # Volunteers were able to identify more than one underlying disease.

Table 2 Elderly requirements while undergoing physical therapy treatment

Item	Level				
	Strongly required	**Required**	**Neutral**	**Minimally required**	**Least required**
1. Clinic location and facilities					
1.1 Required the convenience travelling location	89 (70)	31 (24)	6 (5)	0 (0)	1 (1)
1.2 Required a ramp with handrails at the main entrance	51 (40)	46 (36)	24 (19)	4 (3)	2 (2)
1.3 The door requirement					
1.3.1 Required extra-wide door leaves	43 (34)	58 (45)	25 (20)	1 (1)	0 (0)
1.3.2 Required sliding and barrier-free doors	60 (47)	51 (40)	13 (10)	1 (1)	2 (2)
1.4 Required a spacious clinic with a sufficient waiting space.	71 (56)	42 (33)	11 (8)	2 (2)	1 (1)
1.5 Required the appropriate lighting illuminance level	58 (45)	53 (42)	15 (12)	1 (1)	0 (0)
1.6 Corridor inside the clinic					
1.6.1 Required flooring with non-slip materials	80 (63)	35 (27)	10 (8)	1 (1)	1 (1)
1.6.2 Required wide and barrier-free corridors	71 (56)	42 (33)	13 (10)	1 (1)	0 (0)
1.6.3 Required wall handrails for walking support	51 (40)	47 (37)	23 (18)	4 (3)	2 (2)
1.7 Required clearly visible and perceptible information guide signs	64 (49)	49 (39)	11 (9)	1 (1)	2 (2)
1.8 Required standard elderly restrooms	75 (59)	38 (30)	13 (10)	1 (1)	0 (0)
1.9 Required standard facilities for the elderly	49 (38)	57 (45)	20 (16)	1 (1)	0 (0)
1.10 Required adequate and convenient parking spaces	103 (81)	22 (17)	2 (2)	0 (0)	0 (0)
2. Appointment reminder and transfer assistance service					
2.1 Required a transfer service between the residence and the clinic	26 (21)	23 (18)	46 (36)	20 (16)	12 (9)
2.2 Required a service allowing for appointment reminders and appointment postponement/ cancellation in advance	40 (31)	49 (39)	34 (27)	3 (2)	1 (1)

Table 2 Elderly requirements while undergoing physical therapy treatment (cont.)

Item	Level				
	Strongly required	**Required**	**Neutral**	**Minimally required**	**Least required**
2.3 Required a caregiver service while receiving treatment if a relative or carer could not be present	32 (25)	46 (36)	(20)	16 (13)	7 (6)
3. Treatment quality					
3.1 Required courteous, polite and eager to serve staff	88 (69)	35 (28)	3 (2)	1 (1)	0 (0)
3.2 Required a qualified and expert physical therapist	102 (80)	22 (17)	2 (2)	1 (1)	0 (0)
3.3 Required modern, adequate, and ready to use physical therapy equipment	101 (79)	23 (18)	2 (2)	1 (1)	0 (0)
3.4 Required fast, convenient, and equitable service	89 (70)	34 (27)	3 (2)	1 (1)	0 (0)
3.5 Required services that correlated the clinic's announcements, such as treatment costs, opening-closing hours, etc.	82 (64)	38 (30)	6 (5)	0 (0)	1 (1)
3.6 Required a channel for service complaints in order to resolve any problem promptly.	56 (44)	50 (40)	18 (14)	3 (2)	0 (0)

Note: Data expressed in number (%).

Discussion

The present study was conducted to identify the requirements of the elderly who undergo physical therapy treatment at a clinic in the Khon Kaen District, Thailand. Identifying and understanding such requirements will be useful in conceiving specific plans and renovating the physical environment and in managing the treatment pattern to better serve the needs of the elderly in the future.

The results of this study indicated some important points. The first point related to the clinic location and facilities. The result indicated that the volunteers strongly required a convenient clinic location for easier travelling, adequate and convenient parking space. Then, the following requirements were flooring with non-slip materials, standard elderly restroom and spacious area both in waiting zone and also the corridor. This finding might be explained by the volunteers' age range. Given that aging affects all physiological processes, the older a person becomes, the greater the effects on his/her functional capacities are. This study found that the majority of the volunteers (68%) who joined the study were in the young-old group (60-69 years), 26% were in the middle-old group (70-79 years), and only 6% (80 years and over) were in the old-old group. Comparatively speaking, the young-old elderly was still in better physical health than the others and was better able to perform self-care activities. Generally, they were able to independently walk up the stairs, go to the toilet, walk on a flat road, walk or drive a car outside the residence, and participate in social activities[14]. Therefore, given their age group, this might be the reason why they rated these requirements.

In addition, based on the results of this study, not only the facilities that mentioned earlier, but also the ramps with handrails at the main entrance, sliding and barrier-free doors, wall handrails for walking support, appropriate lighting illuminance level, and clearly visible and perceptible information guide signs, were strongly required by the elderly. This finding might be related to their underlying disease. The study found that only 27% of the volunteers in this study had no underlying disease. While the remaining 73% had underlying diseases. Among these, hypertension was the most common, followed by musculoskeletal disease, cardiovascular disease, and diabetes mellitus. Specifically, the common musculoskeletal diseases reported were osteoarthritis, osteoporosis, gout, and shoulder, back, and knee pain. According to a previous studies, musculoskeletal diseases often cause diminished movement and ADL functions among the elderly[12,13]. Therefore, the Physical Therapy Clinic should have a building design under the limitations experienced by the elderly.

The second point finding relates to appointment reminder and transfer assistance service. This study found that more than one-third of the participants were neutral in terms of requiring a transfer service between their residences and the clinic, whereas they required an appointment management service and also the caregiver service in case of relative or carer could not be present. As mentioned before, the majority of the volunteers participating in this study were the young-old group that was able to perform self-care activities. Therefore, this finding might be explained why they rated neutral for the transfer service. In addition, this study found that 50% of the volunteers lived with their spouses, 25% lived with son or daughter, and 25% lived alone or with their relatives. The primary caregivers were spouses, and sons or daughters, with almost similar percentages. These results were consistent with the report from a previous study conducted among the elderly from 25 provinces in Thailand[14]. The Suitable Welfare for the Elderly in Different Ages study reported that the majority of the young-old and middle-old elderly lived with their spouses, whereas most of the old-old lived with their daughters[17]. In addition, most of the primary caregivers were daughters living in the same household[17]. In the current study, the elderly volunteers lived in an urban society; half of them lived with their spouses. This might be the reason why the volunteers required or strongly required appointment management service and also required caregiver service if a relative or carer could not be present while receiving the treatment.

Finally, for the treatment quality requirement, this study found that the evaluation items that were strongly required by the elderly were a qualified physical therapist and modern, adequate, and ready-to-use equipment. Based on this finding, the researcher suggests that geriatric physical therapists should be hired to provide more a precise assessment and treatment for the elderly. Additionally, there was another suggestion related to the finding. For the Physical Therapy Clinic that converted from a two-storey commercial building as the clinic at KKUKOMOC, the design features might have certain limitations in serving the requirements of the elderly. Therefore, renovation should be considered. Furthermore, although the underlying diseases found in this study can be classified as non-communicable diseases, they can cause further health problems, such as stroke, chronic ulcer, and falling[14]. Therefore, for a better quality of life, the researchers suggested that the elderly should begin to manage their health before going into old age. Moreover, the government and related agencies should implement relevant policies to prevent the occurrence of these underlying diseases among the elderly population.

Study limitations

Some limitations of this study must be considered. First, the clinic at KKUKOMOC was renovated from a two-storey commercial building; hence, its physical environment might be different from that of other building types. As such, the requirements mentioned in this study might not explain the need for all building types. Second, although requirements of the elderly are likely to be the same for any treatment right; however, 85% of the volunteers in this study cited the government or state enterprise officer treatment right. Based on this finding, they were a largely group of retired government employees with relatively high educational, social, and economical status that may not represent a typical urbanized elderly. Therefore, the results in this study may not fully address the requirements of the elderly using other rights and also the elderly who are typical urbanized. Third, the results of this study explain only the requirements of the elderly who undergo physical therapy treatment at a clinic only. Thus, the requirements of elderly people who have to stay at home or are bedridden cannot be explained by the findings of this study.

Conclusion

For the early phase of an aging society, such as that found in Khon Kaen Province, the Physical Therapy Clinic should provide suitable physical environment that can wholly support the diminishing physical abilities of the elderly. Additionally, for the middle-old elderly, apart from the physical environment, it is important that a caregiver service while receiving treatment should be provided. Furthermore, for the old-old elderly, they should be provided with a transfer service to transport them between the residences and the clinic. Finally, a geriatric physical therapist should be hired, and modern, sufficient equipment should be provided to ensure that the elderly will receive the most appropriate assessment and treatment required.

Take home messages

In order to the transition into an aging society of Thailand, the researchers suggest three points for physical therapy clinic. Firstly, the physical environment should support the diminishing physical abilities of the elderly. Secondly, the physical therapist performance and lastly, the treatment equipment should provide to ensure the treatment efficiency.

Conflicts of interest

The authors declare no conflict of interest.

Acknowledgements

This study was supported by a grant from the Khon Kaen University, Khon Kaen, Thailand. In addition, the deep admiration is extended to all staffs of the KKUKOMOC for their kind supports. Additionally, the appreciation is also expressed to all volunteers for their enthusiastic participation in this study.

References

1. Office of the council of state. Elderly Person Act, B.E. 2003. [online] 2003 [cited 2021 Feb 22]. Available from: http://law.m-society.go.th/law2016/uploads/-lawfile/5931130d13414.pdf
2. Department of Older Persons. Situation of the Thai elderly 2019 report. Situation of the Thai elderly. [online] 2021 [cited 2021 Feb 22]. Available from: https://thaitgri.org/?p=39473
3. Department of older person. Elderly statistic. [online] 2021 [cited 2021 Feb 22]. Available from: http://www.dop.go.th/th/know/side/1/1/335
4. Apinonkul B, Soonthorndhada K, Vapattanawong P, Aekplakorn W, Jagger C. Gender differences in health expectancies across the disablement process among older Thais. Plos one 10(3): e0121310.
5. World Health Organization. Older Population and Health System: A profile of Thailand. [online] [cited 2021 Feb 22]. Available from: https://www.who.int/-ageing/projects/intra/phase_one/alc_intra1_cp_thailand.pdf
6. Department of Older Persons. Situation of the Thai elderly 2014 report. Situation of the Thai elderly. [online] [cited 2021 Feb 22]. Available from: http://www.dop.go.-th/download/knowledge/knowledge_th_20161608145327_1.pdf
7. Wisesrith W, Soonthornchaiya R, Sasat S, Sakunphanit T. Care service model for dependent older persons in long-term care institution in Thailand. Journal of the royal Thai army nurses 2019; 20(3): 422-31.
8. Wongboonsin P, Aungsuroch Y and Hatsukano N. The ageing society and human resources to care for the elderly in Thailand. In: Tsujita Y and Komazawa O, editors. Human resources for the health and long-term care of older persons in Asia. Jakarta: ERIA, 2020: p.104-35.
9. Physical Therapy Clinic Standards, permission check. [online] [cited 2021 April 19]. Available from: https://pt.or.th/PTCouncil/pdf/base-pt.pdf
10. Demographic, social and economic profile. In: Knodel J and Chayovan N, editors. Population ageing and the well-being of older persons in Thailand: past trends, current situation and future challenges. UNFPA Thailand, 2008: p 14-31.
11. Khon Kaen provincial health office. Number of elderly in the area responsible. [online] [cited 2021 April 19]. Available from: https://kkhdc.moph.go.th/hdc/main/index.php
12. Royal Thai government gazette. The Ministerial Regulations prescribing building facilities for the disabled or handicapped and the elderly, B.E. 2548 (2005) [online]. 2005 [cited 2021 Feb 22]. Available from: http://www.ratchakitcha.soc.go.th/-DATA/PDF/2548/00166141.pdf
13. Jiraporn Khiewyoo. Alpha coefficient. In: Jiraporn Khiewyoo, editor. Statistical methods for health measurement. Khon Kaen university, 2014: p.129-131.
14. Ministry of social development and human security. The elderly groups classification. In: Kitjao K, Lertmongkolnam P, Nanudorn P, Fakehorm K, Sirpunwatthana U, Kerathiphongpisran K. editors. The suitable welfare for the elderly in different ages study. IQ media, 2015: p.10-11.
15. Rousseau P. Immobility in the aged. Arch Fam Med 1993; 2:169-178.
16. Nigam Y, Knight J, Bhattacharya S, Bayer A. Physiological changes associated with aging and Immobility. J Aging Res 2012; 2012: 468469.
17. Ministry of social development and human security. Current situation. In: Kitjao K, Lertmongkolnam P, Nanudorn P, Fakehorm K, Sirpunwatthana U, Kerathiphongpisran K. editors. The suitable welfare for the elderly in different ages study. IQ media, 2015: p.66-84.
18. World Health Organization, regional office for South-East Asia. Comparative country studies. NCD mortality and morbidity patterns. In: Yiengprugsawan V, Healy J, Kendig H, editors. Health system responses to population ageing and noncommunicable diseases in Asia. Asia pacific observatory on health systems and policies, 2016: p.80-84.