

# Survey on rehabilitation needs and associated factors among older adults at Thong Nhat Hospital, Ho Chi Minh City, in 2025

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## ABSTRACT

**Background:** The aging population in Vietnam is increasing rapidly, leading to a growing burden of chronic diseases and a rising demand for rehabilitation services among older adults. However, this demand has not been fully assessed, particularly at tertiary hospitals. **Objective:** To determine the prevalence and associated factors of rehabilitation needs among older adults at Thong Nhat Hospital, Ho Chi Minh City, in 2025. **Subjects and Methods:** A cross-sectional descriptive study was conducted on 427 older adults (≥60 years) who attended outpatient or inpatient services at Thong Nhat Hospital from September to November 2025. **Results:** The proportion of older adults with rehabilitation needs was 72.6%, with a mean score of  $25.6 \pm 3.3$ . The highest demand was recorded in mechanical therapy techniques, especially full-body exercise (69.4%) and assisted-device training (64.5%). Rehabilitation needs were significantly associated with female gender (OR = 1.78;  $p = 0.008$ ), age group 60–69 (OR = 1; reference), and having three comorbidities ( $p < 0.05$ ). **Conclusion:** Rehabilitation needs among older adults are common and influenced by various demographic and clinical factors. Appropriate rehabilitation programs should be implemented at tertiary hospitals to effectively meet the care needs of the aging population. **Keywords:** older adults; rehabilitation; care needs; comorbidities; Thong Nhat Hospital.

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Received: December 1, 2025  
Reviewed: December 2, 2025  
Accepted: December 22, 2025

## INTRODUCTION

Population aging is reaching an unprecedented peak in the course of human development. In Vietnam, the proportion of individuals aged 65 years and older has reached 7.7% and continues to rise rapidly year by year [1]. The aging index in 2019 was 48.8%, an increase of 13.3% compared to 2009 and more than double that of 1999. It is projected that by 2040, Vietnam will complete its demographic dividend phase and officially enter the aging population stage [1, 2].

Advanced age is closely associated with an increased prevalence of health problems and

the co-occurrence of multiple chronic conditions. A global analysis published in 2025, involving individuals aged 70 years and older across 204 countries, identified the leading causes of disease burden to include ischemic heart disease, stroke, chronic obstructive pulmonary disease (COPD), other chronic respiratory diseases, and infections [3]. These findings clearly highlight the multimorbidity nature of the elderly population, as well as the profound impact of functional decline and disease burden on this age group.

In this context, rehabilitation plays a vital role not only in restoring physical function but also in maintaining independence,

reducing dependency, and improving quality of life for older adults. The current healthcare model is shifting from inpatient care toward community-based and home-based care, which requires older individuals to have a greater capacity for self-care. Consequently, the demand for accessible and appropriate rehabilitation services is increasing.

However, in Vietnam, the rehabilitation needs of older adults have not been comprehensively assessed, particularly at tertiary hospitals—where a large number of older patients seek medical care.

Based on this reality, the present study entitled “Survey on Rehabilitation Needs and Associated Factors Among Older Adults at Thong Nhat Hospital, Ho Chi Minh City, in 2025” was conducted with two main objectives: (1) to describe the rehabilitation needs of older adults, and (2) to identify factors associated with those needs at Thong Nhat Hospital.

## SUBJECTS AND METHODS

### Study population

Older adults (aged  $\geq 60$  years) who attended outpatient clinics and/or were hospitalized at Thong Nhat Hospital, Ho Chi Minh City, between 1 September 2025 and 1 November 2025 were included. Patients were recruited using consecutive sampling during this predefined study period: all eligible individuals who met the inclusion criteria and did not meet any exclusion criteria were enrolled continuously without interruption.

#### *Inclusion criteria*

- Older adults capable of communication (hearing, speaking, reading, and writing).
- No severe psychiatric disorders or cognitive impairments affecting the ability to provide accurate information.

- Voluntary participation with signed informed consent after being fully informed about the study's objectives and procedures.

#### *Exclusion criteria*

- Older adults in emergency conditions or with severe illness preventing participation in interviews.
- Those with severe psychiatric illness, advanced dementia, or significant memory impairment compromising data reliability.
- Individuals who declined to participate or withdrew from the study during data collection.

### Study design

This was a cross-sectional descriptive study.

### Sample size and sampling method

The sample size was calculated using the formula for estimating a single proportion:

$$n = Z_{(1-\alpha/2)}^2 \times \frac{p(1-p)}{d^2}$$

Where:

- n: required sample size
- d : margin of error, set at 0.05
- $\alpha$ : type I error rate, with  $\alpha = 0.05$
- Z : value from the standard normal distribution corresponding to a 95% confidence level,  $Z_{1-\alpha/2} = 1.96$
- p: estimated proportion

Based on the study by Vu Thi Ngoc Luong et al. (2022), the proportion of older adults with rehabilitation needs was 49.7% [4]. Therefore,  $p = 0.497$  was used in the calculation. Substituting the values into the formula, the minimum required sample size was estimated at approximately 384 participants. Accounting for an anticipated 10% non-response rate, the final sample size was set at 427 participants.

### Data collection method and tools

Data were collected through face-to-face interviews using a semi-structured questionnaire comprising 18 items. The questionnaire was developed based on three

key sources: (1) the research objectives, (2) Michael Grossman’s health demand model [5]; and (3) the WHO toolkit for assessing care and rehabilitation needs and functional progress in persons with disabilities.

**Data processing**

Data were entered using Microsoft Excel 2025 and analyzed with SPSS version 22.0. Categorical variables were compared using the Chi-square or Fisher’s exact test where appropriate. Factors associated with

rehabilitation needs were examined using univariate and multivariate logistic regression models, and presented as odds ratios (ORs) with 95% confidence intervals and p-values.

**Ethical considerations**

The study was approved by the Ethics Committee in Biomedical Research of Thong Nhat Hospital under decision No. 73/2025/CN-BVTN-HĐĐĐ.

**RESULTS**

**Characteristics of the study population**

*Table 3.1. Demographic characteristics of participants*

	Frequency (n)	Percentage (%)
<b>Gender</b>		
Male	182	42.6
Female	245	57.4
<b>Age group</b>		
60-69	190	44.5
70-79	165	38.6
≥ 80	72	16.9
<b>Health insurance</b>		
Yes	390	91.3
No	37	8.7

**Findings:** Among the 427 older adults included in the study, females accounted for a higher proportion than males (57.4% vs. 42.6%). The largest age group was 60–69 years (44.5%), followed by 70–79 years (38.6%), and the smallest group was aged ≥80 years (16.9%). Most participants were covered by health insurance (91.3%), with only 8.7% lacking insurance.

**Rehabilitation needs of older adults**

*Table 3.2. Rehabilitation needs*

Rehabilitation need	Frequency (n)	Percentage (%)
Yes	310	72.6
No	117	27.4
Mean score ± SD	25.6 ± 3.3	

**Findings:** The majority of older adults (72.6%) reported a need for rehabilitation, with an average score of 25.6 ± 3.3 points.

*Table 3.3. Rehabilitation needs by therapeutic technique*

Technique Group	Frequency (n)	Percentage (%)
<b>Electrotherapy</b>		

- Shortwave therapy	145	46.8
- Electromagnetic therapy	90	29.0
- Galvanic current	110	35.5
- Pulsed current	135	43.5
<b>Thermal and Phototherapy</b>		
- Infrared therapy	160	51.6
- Laser acupuncture	100	32.3
<b>Ultrasound therapy</b>		
- Therapeutic ultrasound	120	38.7
<b>Mechanical therapy</b>		
- Exercise with assistive devices	200	64.5
- Full-body exercises	215	69.4

**Findings:** The highest demand for rehabilitation was observed in the mechanical therapy group, particularly in full-body exercises (69.4%) and exercises using assistive devices (64.5%). In contrast, the demand for other modalities such as electrotherapy, thermotherapy-phototherapy, and ultrasound therapy was lower and more varied, ranging from 29.0% (electromagnetic therapy) to 51.6% (infrared therapy).

### Factors Associated with Rehabilitation Needs Among Older Adults

**Table 3.4.** Association between demographic characteristics and rehabilitation needs among older adults

Characteristics	Rehab need n (%)	No rehab need n (%)	Total	OR (95% CI)	<i>p</i>
<b>Gender</b>					
Male	120 (65.9)	62 (34.1)	182	1	-
Female	190 (77.6)	55 (22.4)	245	1.78 (1.16-2.74)	0.008
<b>Age group</b>					
60-69	160 (84.2)	30 (15.8)	190	1	-
70-79	100 (60.6)	65 (39.4)	165	0.29 (0.18-0.48)	< 0.001
≥ 80	50 (69.4)	22 (30.6)	72	0.43 (0.23-0.80)	0.007
<b>Health Insurance</b>					
Yes	280 (71.8)	110 (28.2)	390	1	-
No	30 (81.1)	7 (18.9)	37	1.68 (0.72-3.95)	0.26

**Findings:**

- There was a statistically significant association between gender and rehabilitation needs ( $p = 0.008$ ), with females being 1.78 times more likely than males to have rehabilitation needs (OR = 1.78; 95% CI: 1.16-2.74).
- Age group was also significantly associated ( $p < 0.001$ ). The youngest age group (60-69 years) had the highest proportion of need (84.2%). In comparison, the older groups (70-79 and  $\geq 80$ ) had significantly lower odds (OR = 0.29 and 0.43, respectively).
- No statistically significant association was found between health insurance status and rehabilitation needs ( $p > 0.05$ ).

**Table 3.5.** Association between number of comorbidities and rehabilitation needs among older adults

Number of Comorbidities	Rehab need n (%)	No rehab need n (%)	Total	OR (95% CI)	p
1 condition	70 (73.7)	25 (26.3)	95	1	-
2 conditions	65 (76.5)	20 (23.5)	85	1.16 (0.59-2.29)	0.666
3 conditions	60 (80.0)	15 (20.0)	75	2.10 (1.10-4.05)	0.02
4 conditions	50 (76.9)	15 (23.1)	65	1.19 (0.57-2.48)	0.642
5 conditions	35 (70.0)	15 (30.0)	50	0.83 (0.39-1.78)	0.637
>5 conditions	30 (63.8)	17 (36.2)	47	0.63 (0.30-1.33)	0.226
Unknown/ Others	0 (0.0)	10 (100.0)	10	-	-

**Findings:** The rate of elderly people with rehabilitation needs varied heterogeneously among groups with the number of co-morbidities, highest in the group with 3 diseases (80.0%) and lowest in the group with more than 5 diseases (63.8%). The relationship between co-morbidities of 3 diseases and rehabilitation needs was statistically significant ( $p < 0.05$ ).

## DISCUSSION

### Characteristics of the Study Population

The study results showed that the proportion of female participants (57.4%) was higher than that of males (42.6%), which aligns with the general demographic trend among the elderly in Vietnam where the average life expectancy of women is higher than that of men, as reported by the General Department of Population in 2024 [1]. This gender distribution is also consistent with the

findings of Vu Thi Ngoc Luong et al., who reported a female proportion of 67.2% in their community-based study in Vi Xuyen Ward, Nam Dinh [4].

In terms of age distribution, the 60-69 age group accounted for the highest proportion (44.5%), followed by 70-79 years (38.6%), and those aged  $\geq 80$  years (16.9%). This distribution suggests that most participants were in the "young-old" category, who generally retain relatively good mobility and a higher level of functional independence,

thereby facilitating easier access to healthcare services, including rehabilitation. The proportion of participants covered by health insurance was 91.3%, reflecting the relatively broad coverage of social health protection among the elderly population. However, statistical analysis revealed no significant association between health insurance status and rehabilitation needs ( $p > 0.05$ ), suggesting that clinical factors such as functional status and disease burden may play a more decisive role in determining the demand for rehabilitation services.

#### **Rehabilitation Needs Among Older Adults**

The study revealed that 72.6% of older adults had rehabilitation needs, which is significantly higher than the 49.7% reported in a community-based study by Vu Thi Ngoc Luong et al. (2022) [4]. This discrepancy may be attributed to differences in study settings: while the present study was conducted at a tertiary hospital where patients typically exhibit more pronounced functional decline and clinical symptoms, the community-based study included healthier older adults, many of whom had little to no functional impairment. Regarding rehabilitation modalities, the highest demand was observed in mechanical therapy techniques, particularly full-body exercises (69.4%) and exercises using assistive devices (64.5%). This indicates that mobility is often the earliest and most evidently impaired function, making it a top priority for intervention. These findings are consistent with existing literature, which identifies mobility impairment as one of the most characteristic and prevalent manifestations in older adults, directly affecting self-care ability and quality of life. Additionally, techniques such as shortwave therapy (46.8%), infrared therapy (51.6%), and therapeutic ultrasound (38.7%) also showed relatively high demand. These

modalities not only support the recovery of physical function but also contribute to pain relief, improved circulation, and maintenance of sensory function, which are critical components of comprehensive care for older adults with chronic diseases and geriatric syndromes.

#### **Factors Associated with Rehabilitation Needs Among Older Adults**

Multivariate analysis identified statistically significant associations between rehabilitation needs and gender, age group, and having three comorbidities. Specifically, female participants were 1.78 times more likely to express rehabilitation needs compared to males (OR = 1.78;  $p = 0.008$ ). This result is consistent with previous studies that have highlighted the higher health service utilization and care-seeking behavior among elderly women.

In terms of age, the 60-69 age group demonstrated the highest proportion of rehabilitation needs (84.2%). In contrast, the likelihood of reporting rehabilitation needs decreased significantly with increasing age, with odds ratios of 0.29 ( $p < 0.001$ ) for the 70-79 age group and 0.43 ( $p = 0.007$ ) for those aged  $\geq 80$ , compared to the reference group. This inverse relationship may reflect differences in perception, awareness, or access among older age groups, or possibly resignation toward functional decline in more advanced age.

While health insurance coverage was high (91.3%), it was not significantly associated with rehabilitation needs ( $p > 0.05$ ). This suggests that insurance status may not be a primary determinant of perceived need for rehabilitation services; instead, clinical factors such as the severity of functional limitations and comorbidity burden may play a more critical role.

## CONCLUSION

The rehabilitation needs among older adults at Thong Nhat Hospital in 2025 were found to be high (72.6%), with the greatest demand observed for mechanical therapy techniques. These needs were significantly associated with female gender, the 60–69 age group, and the presence of three comorbidities. The findings underscore the necessity of early and comprehensive integration of rehabilitation services into the care of older adults at tertiary hospitals.

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