

# A needs assessment for bachelors in rehabilitation in several provinces in the Central and Highlands of Vietnam

Nguyen Thi Van Kieu<sup>1</sup>, Ngo Van Dong<sup>1</sup>, Vinh Khanh<sup>1</sup>, Vo Ngoc Ha My<sup>1</sup>,  
 Nguyen Thi Mai Anh<sup>1</sup>, Nguyen Thi Bao Ngoc<sup>1</sup>, Pham Thi Thu Ha<sup>1</sup>, Ho Uyen Phuong<sup>1</sup>, Hoang The Hiep<sup>1</sup>, Nguyen  
 Thanh Gia<sup>1</sup>, Le Dinh Duong<sup>1</sup>, Nguyen Minh Tu<sup>1\*</sup>

(1) University of Medicine and Pharmacy, Hue University

## Abstract

**Background:** The study aims to describe the training need of bachelor's degree holders in rehabilitation, providing insights for the University of Medicine and Pharmacy, Hue University, to structure training programs in fields that align with societal demands. **Materials and method:** A cross-sectional study, data was collected through telephone interviews using a semi-structured questionnaire with hospital leaders regarding the demand for rehabilitation professionals in 30 hospitals in 8 provinces in the Central and Highlands regions. **Results:** There are a total of 89 rehabilitation therapists with university degrees, and they are unevenly distributed among the specialties. Specifically, rehabilitation therapists who specialize in physical therapy occupied more than half of the total workforce (53.4%), while the proportion of orthotists is the lowest at 9.2%. Furthermore, 90% of hospitals in the Central and Highlands regions express the training need of bachelor's degree holders in rehabilitation therapy (considering it necessary or very necessary). **Conclusions:** The number of rehabilitation therapists in the Central and Highlands regions remains low, and there is an unequal distribution of human resources among different specialties. Most hospitals require the training of bachelor's degree holders in rehabilitation.

**Keywords:** rehabilitation, human resources, training needs.

## 1. INTRODUCTION

According to the World Health Organization (WHO), more than a billion people worldwide, or 15% of the total population, live with a disability [1]. In Vietnam, the proportion of people with disabilities is alarmingly high as well. By 2023, there will be approximately 7.1 million individuals with disabilities in Vietnam, representing 7.06% of the population of two and over. Among them, there are 1.5 million people with severe and extremely severe disabilities, approximately 10% of them residing in low-income homes [2]. According to data provided by the General Statistics Office and UNICEF in Vietnam, approximately 13% of the population, or almost 12 million people, live in families with disabled members. This shows that impairment affects a considerable proportion of the Vietnamese population and that proportion is expected to increase as the population ages [3].

People with disabilities are among the most vulnerable and disadvantaged groups, often facing stigma and discrimination. Numerous studies have indicated that this discrimination is a leading cause of poverty and limits employment opportunities for people with disabilities. Additionally, they may have restricted access to essential health and education

services. Therefore, prompt rehabilitation therapy is crucial to improve their health and facilitate their social reintegration.

Preliminary findings suggest that 92% of the worldwide burden of disease is attributed to factors requiring the intervention of healthcare professionals in rehabilitation [4]. According to WHO guidelines, there should be 0.5-1 rehabilitation therapists per 10,000 individuals. It is concerning that 62 countries around the world do not offer rehabilitation services to people with disabilities and only a small percentage of the population in low-income countries has access to assistive technologies. In Vietnam, the ratio stands at just 0.25 rehabilitation therapists per 10,000 inhabitants, indicating a deficit of approximately 4,850 rehabilitation professionals in the country [5]. Addressing this shortage and improving access to rehabilitation services and assistive technologies are imperative steps to support individuals with disabilities in Vietnam and improve their quality of life.

According to a study conducted by the University of Public Health on the need for rehabilitation therapists to be trained in Vietnam in 2019, the country currently faces a shortage of around 10,000 skilled rehabilitation therapists.

However, the utilization of human resources with bachelor's degrees in rehabilitation techniques within hospitals is still constrained. The provision of assistive equipment and a comprehensive range of technical services at all levels remains limited. Patients and individuals with disabilities continue to face substantial financial obstacles that hinder their ability to access and use services.

The scarcity of rehabilitation specialists in Vietnam is exacerbated by the fact that only a few large hospitals or specialized facilities are equipped to recruit and employ such professionals. This situation results in a lack of rehabilitation professionals in many smaller hospitals, limiting their ability to provide essential rehabilitation therapies to their patients. Consequently, insufficient human resources for rehabilitation in Vietnam have the potential to significantly decrease the quality of rehabilitation services available. Many patients cannot access the necessary and timely rehabilitation services, leading to complications and severe health consequences. In response to these challenges, a study titled "A needs assessment for bachelors in rehabilitation in several provinces in the Central and Highlands of Vietnam" was conducted with two primary objectives:

1. *Assess the current status of human resources comprising bachelor's in rehabilitation working in several provinces in the Central and Highlands*
2. *To outline the demand for training bachelors in rehabilitation.*

## 2. METHODS

### 2.1. Study design, setting and procedure

This cross-sectional observational study using a purposive non-probability sampling method that was carried out on 30 hospital leaders and heads of rehabilitation departments from 30 hospitals across

8 provinces in the Central and Highlands of Vietnam between June 2023 and June 2024. The survey comprised three main parts:

- Part 1: General Information - This section collected data on the name of the agency, province, and region.

- Part 2: General Information about Human Resources - This part focused on gathering information on the number of physicians and therapists working in specialized fields of rehabilitation based on their academic title and degree at each hospital. It also investigated the number of rehabilitation therapists specializing in various majors, such as physical therapy, speech therapy, occupational therapy, and orthopedics.

- Part 3: Information on Future Human Resource Needs in Rehabilitation - This section aimed to evaluate the anticipated need for training in bachelor's degrees for rehabilitation therapists. It evaluated the current shortage of bachelor's in rehabilitation within the agencies and determined the specific areas where training of bachelor's in rehabilitation is required to meet the existing demand effectively.

### 2.2. Statistical analysis

After gathering, the data were cleaned and entered into Epidata 3.1 software. The acquired data were analyzed using SPSS 20.0 statistical software, and the results were presented as frequency and proportion.

### 2.3. Ethics statement

The study was approved by the Scientific Council of Hue University of Medicine and Pharmacy, Hue University (3151/QD-DHYD, 20 July 2023). Participants received a clear explanation of the purpose and content of the research. The collected information was kept confidential and used only for research purposes.

## 3. RESULTS

### 3.1. Current status of human resource for bachelor's degree holders working in specialized, provincial and district hospitals in the Central and Highlands of Vietnam

**Table 1.** Current status of human resources for rehabilitation working in hospitals

Specialized	Specialized hospital		District hospital		Provincial hospital		Total	
	n	%	n	%	n	%	n	%
Specialist level 1,2 doctors	32	15.5	24	16.6	11	6.2	67	12.6
Medical doctor	54	26.1	38	26.2	31	17.3	123	23.1
Traditional medicine doctor	23	11.1	39	26.9	9	5.0	71	13.4

University-level rehabilitation therapist	30	14.5	18	12.4	41	22.9	89	16.8
College-level rehabilitation therapist	68	32.8	26	17.9	87	48.6	181	34.1
Total	207 (39.0%)		145 (27.3%)		179 (33.7%)		531 (100%)	

The study carried out in hospitals in the Central and Highlands region included a total of 531 physicians and therapists. Among them, 207 were based in specialized hospitals (39%), 145 in district hospitals (27.3%), and 179 in provincial hospitals (33.7%). The distribution of rehabilitation human resources differed based on the professional level, with college-level rehabilitation therapists accounting for the largest proportion at 34.1%. In comparison, specialist level 1 doctors and specialist level 2 doctors had the lowest representation. Medical doctors, traditional medicine physicians, and university-level rehabilitation therapists made up 23.1%, 13.4%, and 16.8% of the total, respectively. This breakdown provides valuable information on the composition and distribution of human resources for rehabilitation at different levels of care facilities in the specified regions of Vietnam. The difference in human resources is also reflected in each specific department with unequal ratios between the professional levels of doctors and therapists.

In specialized hospitals, the proportion of college-level rehabilitation therapists represents the highest percentage (32.8%), followed by specialists at level 1 and 2 (15.5%), medical doctors (26.1%), traditional medicine physicians (11.1%), and university-level rehabilitation therapists (14.5%). At provincial hospitals, the distribution of professional qualifications is quite similar to that of specialized hospitals, with proportions being college-level rehabilitation therapists (48.6%), specialist level 1 and 2 doctors (6.2%), medical doctors (17.3%), traditional medicine doctors (5.0%), and university-level rehabilitation therapists (22.9%). In district hospitals, there is a distinct difference in professional qualifications. The percentage of college-level rehabilitation therapists is 17.9%, while university-level rehabilitation therapists make up 12.4%. Doctors make up more than two thirds of the workforce, with specialist level 1 and 2 doctors accounting for 16.6%, medical doctors for 26.2%, and traditional medicine physicians for 26.9%.

### 3.2. The current status of human resources for bachelor's degree holders in rehabilitation working in provincial and district hospitals in the Central and Highlands region

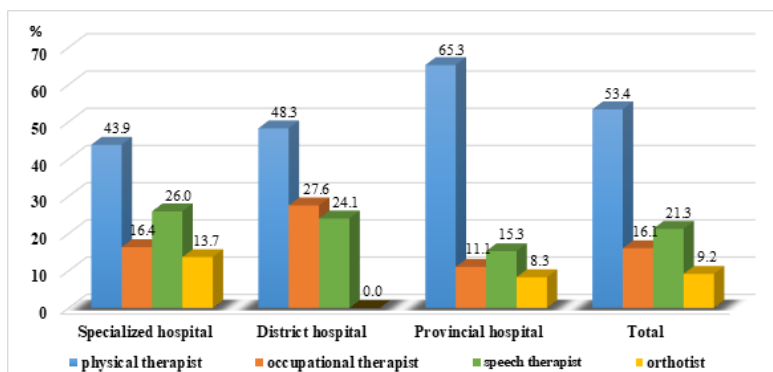


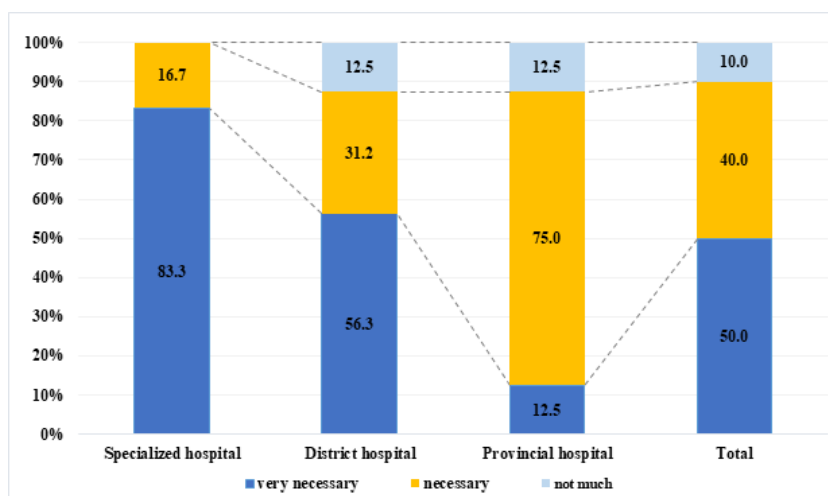
Figure 1. Proportion of rehabilitation therapists (university level) by specialization

The results reveal an imbalance in the ratio of rehabilitation therapists in hospitals by major. Physical therapists represent more than half of the total workforce (53.4%). The percentage of physical therapists is notably highest in specialized hospitals, accounting for 43.9%, in district hospitals, 48.3%, and in provincial hospitals it increases to 65.3%.

In contrast, orthotists constitute the smallest proportion of the total workforce across regions and hospital levels, with rates of 9.2% overall,

13.7% in district hospitals, and 8.3% in provincial hospitals; notably, orthotists are completely absent at the district level. The percentages of occupational therapists and speech therapists are comparable between hospital levels and in total. Occupational therapists range from 11.1% in provincial hospitals to 27.6% in district hospitals, while speech therapists range from 15.3% in provincial hospitals to 26% in specialized hospitals.

### 3.3. The need for training bachelors in rehabilitation



**Figure 2.** The need for training bachelor's degrees in rehabilitation

Research results indicate that the need for training individuals with bachelor's degrees in rehabilitation is primarily assessed as necessary or very necessary. The combined percentage of these two levels is 90% in general, with figures of 87.5% at the provincial and district hospital levels. In particular, this percentage reaches 100% in specialized hospitals.

## 4. DISCUSSION

### 4.1. The current status of human resources for individuals with bachelor's degrees in rehabilitation working at hospitals in the Central and Highlands

The number of doctors and therapists working in the rehabilitation department in the Central and Highland regions is currently quite low. Rehabilitation experts in specialized hospitals constitute the largest proportion, making up almost 2/5 of the total workforce, indicating their preference for suitable hospital environments. This proportion is considerably lower compared to a study by Doan Quoc Hung et al., which revealed that more than half of all rehabilitation specialists work in specialized hospitals [8]. In our study, the percentage of rehabilitation specialists in provincial hospitals surpasses that in district hospitals, in contrast to the findings of the aforementioned study [8]. These disparities between studies may arise from differences in research locations; our investigation focused on a smaller area, while other studies that cover the entire country exhibit variations in human resource needs between geographical locations.

Our research highlights significant disparities in the professional qualifications of human resources

within the field of rehabilitation. Among doctors, the majority hold general practitioner qualifications, while therapists primarily have college-level, the specialty doctors are still quite low. This indicates a lack of specialized training in rehabilitation among the current medical workforce, many of whom are working in nonspecialized areas. Unfortunately, human resources for rehabilitation are often overlooked in efforts to strengthen health services and develop healthcare personnel.

Despite various guidelines and policies issued by the Party and the state on the development of rehabilitation services, including the National Plan for the 2014 - 2020 period, rehabilitation services remain inadequate, particularly at the grassroots healthcare level. The percentage of patients who access appropriate rehabilitation services is low, just over 40%. The demand for rehabilitation services is projected to increase due to shifting disease patterns characterized by a high burden of chronic and noncommunicable diseases, as well as unintentional injuries.

The rehabilitation workforce typically consists of physicians specially trained to deliver rehabilitation care, although in certain settings, both medical and nonmedical personnel may undertake related tasks. Low- and middle-income countries often face challenges in terms of the availability of skilled health workers despite growing need. Furthermore, the competencies, skills, and practices of rehabilitation staff can vary significantly between countries and practice settings.

Given these challenges, it is crucial to enhance the comprehensive training of rehabilitation human

resources to ensure that individuals with disabilities and those in need can access high-quality, holistic, continuous, and equitable rehabilitation services. This is essential to reduce the prevalence of disabilities within communities and contribute to the larger objectives of promoting health, social welfare and overall well-being.

#### **4.2. The current status of human resources for bachelors in rehabilitation working in hospitals in the Central and Highlands**

Human resources for bachelors in rehabilitation are currently unevenly distributed between different majors, with a significant gap observed between the four main specialties: physical therapy, speech therapy, occupational therapy, and therapeutic/assistive equipment. Presently, the human resource allocation for physical therapists is notably high, constituting the largest proportion across all specialties, accounting for more than 40% in hospitals at all levels and specialized hospitals). This mirrors the findings from a 2021 study on the distribution of rehabilitation human resources across seven ecological regions of the country, where the prevalence of physical therapists was also predominant, especially in provincial hospitals at a rate of 95.2% [8]. It has been highlighted in various reports that in many low- to middle-income nations where specialist rehabilitation professionals are limited, physical therapy often serves as the only available rehabilitation profession [14].

Our research indicates the lowest representation of orthotists, even in district hospitals where specialists in this domain are not currently present. This contrasts with a comprehensive study conducted in the seven ecological regions in the past, in which orthotists occupied a higher position and were ranked third among the various majors [8].

Variations in the proportion and distribution of human resources for rehabilitation therapists across different specialties in certain studies could potentially be elucidated by specific research settings. Disparities in the demand for rehabilitation therapists or the availability of work opportunities among specialties may influence these differences. In our research, it is evident that physical therapy therapists play a vital role and are perceived as the primary human resource in the field of rehabilitation. However, the discrepancy in human resources allocation among various rehabilitation specialties may impede the delivery of high-quality rehabilitation services. Multidisciplinary rehabilitation approaches are widely recognized to be the most effective in

providing quality rehabilitation services [14].

#### **4.3. The need for training bachelors in rehabilitation**

Based on our findings, a majority of the hospitals surveyed believe that a bachelor's degree training in rehabilitation is not only necessary but also extremely important. This sentiment aligns with Tran Thi My Hanh's research, which reported that 89.6% of direct workers agreed on the necessity to improve training for bachelor's in rehabilitation [6]. This underscores the shortage of human resources for rehabilitation in the Central and Highlands regions, which is insufficient to meet the current demands for healthcare. This shortage is one of the six challenges identified by Tiago S. Jesus et al. in their study on the global rehabilitation workforce. The research results highlight the inadequate distribution of human resources in various areas, underscoring the importance of education, attractiveness, and remote services [11]. Numerous studies have highlighted the limited availability of training programs for qualified rehabilitation personnel in low-income countries [15, 16].

Therefore, it is imperative to focus on training and developing new rehabilitation majors, expanding training facilities, increasing annual training targets, and diversifying specialized training programs to ensure a sufficient quantity, quality, and appropriate specialized structure of human resources for rehabilitation in the future. These efforts are essential to address the growing demand for rehabilitation services and the evolving diversity of approaches, aligning with the Ministry of Health strategy for the development of the rehabilitation system [7].

### **5. CONCLUSION**

The distribution of human resources for bachelor's in rehabilitation is currently uneven between majors, with a substantial disparity between the four main majors: physical therapy, speech therapy, occupational therapy, and therapeutic/assistive equipment. Physical therapists make up more than half of all rehabilitation therapists (53.4%), while orthotists represent the lowest proportion in regions and hospital levels. Most of the hospitals surveyed have evaluated the demand for training bachelors in rehabilitation as essential or highly essential, particularly in the Central and Highland regions.

### **6. CONFLICT OF INTEREST**

The authors declare no conflict of interest.

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