Factors Affecting the Choice to Study Residency Programmes

in Regional Hospitals in Thailand

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Abstract

Introduction: The residency training system in Thailand includes two sections: training in regional hospitals and training in university hospitals. The proportion of training in university hospitals is significantly higher due to their greater popularity. Understanding the factors that influence the decision to choose residency training location could help improve training in regional hospitals and increase their popularity among new doctors.

Methods: This analytical cross-sectional study collected data through an online questionnaire from residents currently training in either regional or university hospitals in Thailand. The study examined whether various factors related to the institution's characteristics and personal reasons were associated with the choice to train in regional hospitals.

Results: A total of 111 respondents participated, comprising 57 males (51.35%) and 54 females (48.65%). Among them, 94 (84.68%) were training in regional hospitals, while 17 (15.32%) were in university hospitals. Results show that a significant factor influencing the choice to train in regional hospitals was lack of confidence in being selected for university hospitals (p-value = 0.001). Other factors, including quality of the training system, educational support, and work-life balance, were statistically significant in univariate binary logistic regression but not in multivariate analysis.

Conclusion: A significant factor influencing doctors to choose residency training in regional hospitals in Thailand is a lack of confidence in being selected for university hospitals, which is a personal reason that cannot be changed. However, regional hospitals can improve the quality of their training systems, educational support, and work-life balance to increase their attractiveness to new doctors.

Keywords: Residency, Internship, Regional Hospital, Tertiary Hospital, Community Hospital

Introduction

Medical Education in Thailand requires six years of study. After graduation, most new doctors work as general practitioners for three years to repay their scholarships. Due to the low compensation and high workloads in community hospitals[1], many doctors choose to pursue residency programmes or leave public service after fulfilling their obligations. Only a few remain as general practitioners in community hospitals.[2] Another reason that influences physicians to return for residency training is their desire to become specialists with greater knowledge in patient care or to work in a specific field that they are interested in.

Residency training in Thailand can be undertaken in both university hospitals and regional hospitals, with a higher proportion choosing university hospitals. This imbalance often results in regional hospitals not filling their residency training positions. International studies have shown that factors such as patient volume, instructor expertise, hospital reputation, and the quality of the training systems influence the choice of residency locations.[3–6] Other factors that may affect the decision of where to pursue residency training include the workload and whether it is heavy or light.[7] In Thailand, there have been no studies that have examined the factors affecting the choice of residency training in regional hospitals. This research aims to study the factors associated with the decision to pursue residency training in regional hospitals in Thailand, in order to use the findings as guidelines for developing the residency training system in the future.

Methods

This study is an analytical cross-sectional study that collected data from 1 April 2024 to 30 June 2024. The inclusion criteria included residents currently training in regional hospitals and university hospitals in Thailand. The exclusion criteria consisted of residents training in fields exclusive to university hospitals or specialized regional hospitals, such as ophthalmology, otolaryngology, forensic medicine, psychiatry, etc. For sample size determination, G Power software was used with linear multiple regression. The effect size was set to 0.2, α = 0.05, and power = 0.8. With 19 variables, the minimum sample size needed was 240 participants.

The researchers collected data through an online questionnaire using a 5-point Likert scale to rate the importance of each factor in choosing a residency training institution. A score of 5 indicated strong agreement, 4 indicated agreement, 3 indicated neutrality, 2 indicated disagreement, and 1 indicated strong disagreement. The questionnaire was validated by experts in medical education and was pre-tested with the target group before actual use (validity testing). All collected data were compiled in Microsoft Excel (version 2021).

Quantitative variables were presented using descriptive statistics, including numbers (percentage) for categorical variables. Normally distributed continuous variables were presented

as mean (standard deviation). Comparisons between the sample groups training in regional hospitals and those training in university hospitals were conducted using analytical statistics calculated with Stata MP18 software, employing the independent t-test. Univariate binary logistic regression analysis was used to determine the relationships between the studied factors and the outcome of choosing residency training in regional hospitals. Factors with statistically significant relationships (p-value < 0.05) were then analysed again using multivariate binary logistic regression to identify the true factors associated with the choice of residency training in regional hospitals.

Results

This study had a total of 111 respondents, consisting of 57 males and 54 females. There were 94 respondents currently training as residents at regional hospitals (84.68%) and 17 residents training at university hospitals (15.32%) (Table 1). A total of 55 regional hospitals across Thailand participated in this research, along with 4 university hospitals: Khon Kaen University, Chiang Mai University, Naresuan University, and Prince of Songkhla University. The residents who participated in the research comprised 15 in internal medicine, 23 in surgery, 11 in paediatrics, 14 in obstetrics and gynaecology, 12 in orthopaedics, 24 in family medicine, and 12 in emergency medicine.

Table 1 Basic characteristics of respondents (n=111)

Characteristics	Number (%)	Mean (SD)
Gender		
Male	57 (51.35)	
Female	54 (48.65)	
Age		29.62 (3.46)
Marital Status		
Married	9 (8.11)	
Single	102 (91.89)	
Training Institution		
Regional Hospital	94 (84.68)	
University Hospital	17 (15.32)	

The results of the study indicated that there are two factors regarding the characteristics of the institution that were more valued by the group training for residency at the university hospital than the group training at the regional hospital, with statistical significance: the quality of the training system and the educational support. In contrast, other factors such as the institution's reputation, the number and expertise of the teaching staff, the number of patients, the complexity of patients, opportunities for international electives, and the statistics of board examination pass rates were equally valued by both groups, with no significant statistical difference. (Table 2)

Table 2 Factors influencing the choice of training location (institutional characteristics)

Factors	Mean Questionnaire Score (SD) (n = 111)		p-value*
	Regional Hospital (n = 94)	University Hospital (n = 17)	
Institutional Reputation	3.68 (0.88)	4.12 (0.78)	0.059
Number and Expertise of Teaching Staff	3.96 (0.84)	4.18 (0.81)	0.322
Adequate Patient Load	4.06 (0.84)	3.94 (1.03)	0.59
Complexity of Cases	3.86 (0.73)	4.24 (0.66)	0.051
Quality of Training System	4.02 (0.83)	4.59 (0.62)	0.008
Educational Support	3.97 (0.85)	ส4.53 (0.51)	0.009
Opportunity for International Electives	3.84 (1.00)	4.12 (0.86)	0.285
Board Passing Statistics	4.21 (0.81)	4.18 (0.81)	0.866

*The data from both groups are significantly different at a statistical level when the p-value < 0.05.

Regarding personal factors, it was found that there are two factors that significantly influenced decisions regarding the choice of training location. Specifically, the group training at the university hospital valued work-life balance more than the group training at the regional hospital. Additionally, the group training at the university hospitals had significantly higher confidence in being selected if applying for residency training at a university hospital compared to the group training at the regional hospitals (Table 3).

Table 3 Factors influencing the choice of training location (personal reasons)

Factors	Factors Questionnaire Score Mean (SD) (n = 111)		p-value*
	Regional Hospital (n = 94)	University Hospital (n = 17)	
Provincial Development	3.90 (0.92)	4.12 (0.86)	0.375
Proximity to Family	3.97 (1.14)	4 (0.94)	0.914
Work-Life Balance	3.65 (1.14)	4.41 (0.71)	0.009
Scholarship Conditions	3.77 (1.18)	3.77 (1.15)	1.00
GPAX Score	3.26 (0.93)	3.12 (1.22)	0.593
Confidence in Being Accepted to University Hospitals	2.86 (1.22)	4.29 (0.69)	<0.001
Opportunity for Salary Increment with Regional Hospital Training	3.56 (1.09)	3.47 (1.23)	0.752
Advice from Previous Trainees	3.69 (0.95)	4.06 (0.83)	0.138
Graduation from CPIRD**	3.27 (1.38)	3.24 (1.39)	0.933
Having previously worked at That hospital	2.83 (1.33)	3.12 (1.32)	0.411
Publicity of That Hospital	3.14 (1.09)	3.41 (1.12)	0.347
Opportunity to Become Staff Post-Training	3.10 (1.34)	3.53 (1.23)	0.218

* The data from both groups are significantly different at a statistical level when the p-value < 0.05.

** CPIRD refers to the Collaborative Project to Increase Production of Rural Doctors.

When all the factors were examined for their relationship with the selection of residency training at a regional hospital using univariate binary logistic regression analysis, it was found that four factors had a statistically significant relationship: the quality of the training system, educational support, work-life balance, and confidence in being selected if applying for residency training at a university hospital. However, when these four factors were analysed using multivariate binary logistic regression, only one factor was found to be related to the selection of residency training at a regional hospital: confidence in being selected if applying to a university hospital (odds ratio 0.18, 95% CI 0.06-0.5, p-value 0.001) (Table 4).

Table 4 Relationship between various factors and choice of residency training in a regional hospital

Factors	Crude odds ratio (95% CI)	p-value*	Adjusted odds ratio (95% CI)	p-value*
Institutional Reputation	0.46 (0.21-1.01)	0.052		
Number and Expertise of Teaching Staff	0.60 (0.28-1.25)	0.173		
Adequate Patient Load	0.97 (0.52-1.80)	0.913		
Complexity of Cases	0.41 (0.17-0.98)	0.045		
Quality of Training System	0.32 (0.12-0.81)	0.017	0.67 (0.15-3.05)	0.604
Educational Support	0.27 (0.1-0.72)	0.009	0.47 (0.11-2.04)	0.311
Opportunity for International Electives	0.69 (0.37-1.28)	0.244		
Board Passing Statistics	0.93 (0.46-1.87)	0.841		
Provincial Development	0.74 (0.39-1.39)	0.346		
Proximity to Family	1.03 (0.63-1.7)	0.9		
Work-Life Balance	0.41 (0.2-0.86)	0.018	0.47 (0.16-1.35)	0.16
Scholarship Conditions	0.89 (0.55-1.44)	0.623		
GPAX Score	1.05 (0.6-1.84)	0.862		
Confidence in Being Accepted to University Hospitals	0.22 (0.1-0.49)	< 0.001	0.18 (0.06-0.5)	0.001
Opportunity for Salary Increment with University Hospital Training	0.89 (0.53-1.47)	0.645		
Advice from Previous Trainees	0.56 (0.28-1.15)	0.114		
Graduation from CPIRD	1 (0.67-1.5)	0.987		
Previous Funding Experience with That Hospital	0.81 (0.53-1.24)	0.339		
Publicity of That Hospital	0.75 (0.44-1.28)	0.292		
Opportunity to Become Staff Post-Training	0.71 (0.45-1.11)	0.138		

* Factors will be significantly related to the selection of residency training in a regional hospital when the p-value < 0.05.

Discussion

The selection of medical residency training programmes reveals several factors that influence the choice of specialty and institution for training. Factors affecting the selection of institutions for residency training include the quality of the training system, expertise of the teaching faculty, and the number and complexity of patients is suitable for learning[5]. Additionally, examination results upon graduation from medical school are correlated with acceptance into residency programmes in highly competitive specialties[8]. Regarding workload factors in patient care, this has become an increasingly important issue for physicians today. Previous studies have found that factors related to workload volume and the imbalance between work time and personal life affect the decision to choose residency specialties more in females than in males[9]. Although increased patient care workload can help residents develop more skills, an excessive workload reduces the time that residents have for studying and acquiring knowledge[10].

Currently, Thailand's Ministry of Public Health is attempting to encourage regional hospitals to train residents in their facilities. However, the preference for residency training remains predominantly at university hospitals. This causes many regional hospitals to have insufficient numbers of residency applicants to fill their training capacity, resulting in staffing shortages for patient care services.

Regarding the factors affecting the decision to choose residency training locations in terms of institutional characteristics, two factors were found to significantly influence decisions: the quality of the educational system and educational support resources. This is consistent with international studies[5,11]. In developed countries, residency training at university hospitals versus community hospitals shows no difference in graduation rates and knowledge acquired.[4] However, in Thailand, university hospitals generally have higher-quality training systems and better educational support resources, which makes residency training at regional hospitals much less popular compared with university hospitals.

Concerning the factors affecting the decision to choose residency training locations in terms of personal reasons, only two factors had significant influence: not having an excessively heavy workload and confidence in being selected for training at university hospitals. This is consistent with previous research which found that medical students significantly prefer to pursue residency training in controllable lifestyle specialties (Anesthesiology, Dermatology, Ophthalmology, Otolaryngology, Psychiatry, Radiology) rather than non-controllable lifestyle specialties (Internal Medicine, Paediatrics, Obstetrics and Gynaecology, Surgery).[7] Residents applying to university hospitals place greater importance on not having an excessively heavy workload compared to those training at regional hospitals,

because in Thailand, regional hospitals clearly have more patients than university hospitals. Therefore, those seeking a comfortable work-life balance tend to apply more frequently to university hospitals. Due to the much higher competition rate for university hospital applications compared to regional hospitals, those applying for residency at university hospitals must have a high level of confidence that they will be selected, which is consistent with the finding of this research that the members of the group training at university hospitals had greater confidence in their applications than those training at regional hospitals.

When analysing the data using multivariate binary logistic regression to find the relationships between the various factors and the decision to choose residency training institutions, only one factor significantly affected the decision to train at regional hospitals: lack of confidence in being selected if applying to university hospitals (adjusted odds ratio less than 1 indicates that those applying to regional hospitals lack confidence in being selected if applying to university hospitals). This issue of confidence in being selected for university hospital training is a personal reason that cannot be controlled. Meanwhile, other factors such as the quality of the training systems, educational support resources, and creating balance to prevent excessive workload, while not showing significant relationships with choosing regional

hospitals residency training in the multivariate binary logistic regression analysis, did show relationships with institutional selection decisions in the univariate binary logistic regression analysis and the remaining factors that all regional hospitals can improve.

This indicates that to solve the problem of a shortage of residents coming to study at regional hospitals in Thailand's healthcare system, the quality of training systems, educational support resources, and the balance to prevent excessive workload—factors that residency applicants consider important—must be improved. If any regional hospitals cannot develop these three factors, they may have no residency applicants or may only attract lower-quality applicants who were not selected for university hospital training. The limitation of this study is that the number of questionnaire respondents was fewer than calculated. This was due to the data collection being conducted during a period that was close to the board examinations scheduled for medical residents, which resulted in fewer questionnaire respondents than anticipated. Furthermore, an insufficient sample size may impact the multivariate analysis of associations, as the data will have high variance, resulting in low statistical power and potential bias.[12]

Conclusion

The key factor influencing the choice of physicians to train as residents in regional

hospitals in Thailand is the lack of confidence in being selected if applying to university hospitals. This factor is a personal reason that cannot be changed. However, regional hospitals can improve by enhancing the quality of their residency training programmes, developing educational support, and creating a balance between work, learning, and personal life. If any regional hospitals can develop these factors, it will likely increase the chances of physicians choosing to train as residents at that regional hospital in the future.

Ethical Approval

This research was approved by the Chanthaburi Research Ethics Committee/ Region 6, in compliance with Document no. CTIREC 012/67, Project no. CTIREC 022/67, on 18 March 2024.

Data Availability

Data are available from the authors upon request.

Acknowledgement

Funding

Declaration of Interest

The authors declare no conflicts of interest in this work.

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