Original Article

Clinical Competency Needs of Physiatrists in Thailand: A Cross-Sectional Study

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ABSTRACT

Objectives: To determine the degree to which the clinical competency needs of Thai practicing physiatrists in the current rehabilitation medicine residency curriculum align with topics validated by the Board of Training and Examination in Rehabilitation Medicine of Thailand

Study design: Cross-sectional study

Setting: Department of Rehabilitation Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand

Subjects: Total Thai physiatrists in 2020-2021

Methods: A total of 731 physiatrists in Thailand were surveyed using the questionnaire which was composed of two parts. The first part covered participants' characteristics. The second part included 96 rehabilitation medicine topics which had been validated by the Board of Training and Examination in Rehabilitation Medicine of Thailand. Participants rated each of the topics on a four-point (1-4) Likert scale for both "Frequency" and "Importance". Frequency refers to how often the participant applied each topic in their practice and importance refers to the significance of each topic in their clinical practice.

Results: The response rate was 15.3% (112/731). The five most frequently encountered conditions rated 4 were low back pain (N=86.6%), osteoarthritis of the knee (N=83.0%), stroke (N=79.5%), spondylosis/spondylolisthesis (N=78.6%), and radiculopathy (N=70.5%). The five most essential conditions rated 4 were stroke (N=87.5%), osteoarthritis of the knee (N=79.5%), low back pain (N=78.6%), chronic pain (N=75.9%), and radiculopathy (N=75.0%).

Conclusions: The survey provides essential information which the Royal College of Physiatrists of Thailand and could use to help improve the curriculum content for entrustable professional activities.

Keywords: physical and rehabilitation medicine, education, medical, graduate, professional practice, program evaluation

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Introduction

Medical education is a science characterized by continuous improvement. Competency-based medical education (CBME) is a paradigm that conceptualizes curriculum competencies and focuses on the development of learners.[1] The key components of an educational curriculum are objectives, learning, and evaluation. In CBME, the evaluation process is based on the concept of entrustment to ensure the professional competency of students and trainees. Entrustable professional activities (EPAs) are tasks or responsibilities that can be entrusted to a trainee once they have sufficient specific competence to allow unsupervised practice.[2] EPAs are now crucial for assessing competency in on-the-job or clinical undergraduate and postgraduate medical education activities.[3] The advantages of EPAs include integrating several competencies into one EPA, promoting patient safety by confirming that learners can complete an activity without supervision and enabling learners to compare their progress to standard milestones and EPAs.[4]

Rehabilitation medicine residency training is a postgraduate program that provides training in diagnosing and managing various conditions, including those affecting special populations and all age groups. In Thailand, the Royal College of Physiatrists of Thailand (RCPhysiatrT) has transitioned the curriculum to be a competency-based medical education which includes competencies in areas such as patient care, medical knowledge and practical skills, interpersonal and communication skills, practice-based learning and improvement, professionalism, and system-based practice. To develop residents into entrustable physiatrists for Thai society, EPAs have become essential for assessing residents' competencies during training. According to the development of curriculum and clinical practices, a previous study in the United States (U.S.) by the Association of Academic Physiatrists conducted a study which proposed the grouping typical clinical activities

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into nineteen EPAs carried out by residents in physical medicine and rehabilitation (PM&R) in their practices.[5] Additionally, a study in the U.S. supported the idea that electrodiagnostic EPAs in the curriculum demonstrated potential as tools for evaluating the observational abilities of PM&R residents in the outpatient context.[6] Additionally, the another previous study in the U.S. developed observable professional activities in the spinal cord injury EPAs for the PM&R residents to practice in a real-life setting.[7] According to another survey in the U.S., creating a rehabilitation global health curriculum that PM&R residents can access could offer chances for resident improvement, strengthen connections with foreign partners, and increase the accessibility of rehabilitation services to older adults.[8]

In the Thai context, the Board of Training and Examination in Rehabilitation Medicine (TERM) under the Royal College of Physiatrists of Thailand listed thirteen EPAs during curriculum development in 2018-2019. However, those epidemiological changes, social contexts, and technological revolutions have disrupted the current health system.[9] In response, a wide range of conditions have been included in the curriculum. To ensure the clinical practice content is relevant and meets societal needs, it is important to survey PM&R members in Thailand. However, the RCPhysiatrT had not previously conducted such a survey. The present study is the first of its kind in Thailand. It was conducted with the objective of determining the degree to which the clinical competency needs of Thai practicing physiatrists under the current rehabilitation medicine residency curriculum align with topics validated by the Board of Training and Examination in Rehabilitation Medicine.

Methods

Study design

This cross-sectional study was conducted at the Department of Rehabilitation Medicine, Siriraj Hospital, Thailand. The protocol for the study was approved by the Siriraj Institutional Review Board (SIRB), Faculty of Medicine Siriraj Hospital, Mahidol University (COA no. SI 789/2019).

Participants

All 731 members of the Royal College of Physiatrists of Thailand at the time of the study were invited to participate by filling out a Google Forms questionnaire via group email and the Line social media application between 2020-2021. The researcher sent the documents to the RCPhysiatrT for permission to distribute the online questionnaire to the members. Then the secretaries of the RCPhysiatrT sent the online questionnaire as an e-mail attachment to all members. The researchers and the secretaries also sent the online questionnaire to all current members of the Thai physiatrist group using the Line social media application. Responding to the confidential online surveys involved participants reading a general introduction page, selecting the "next" option, and indicating their consent to complete the surveys.

Outcome measurements

The questionnaire consisted of two parts. The first part focused on the participants' characteristics, and the second part included ninety-six rehabilitation medicine topics from the Thai curriculum of rehabilitation medicine residency training program curriculum. Adapted from a previous study[10], participants rated each topic on two aspects, "frequency" and "importance," using a four-category rating scale. Frequency refers to how often respondents applied each topic during their clinical practice as physiatrists. The frequency domain scores ranged from 1: "never or rarely used the knowledge"; 2: "used the knowledge in a few cases"; 3: "used the knowledge sometimes"; and 4: "used the knowledge very often". Importance refers to the respondent's estimation of the significance of each topic in their clinical practice as physiatrists. In the importance domain, the scores consisted of 1: "unimportant," 2: "somewhat important," 3: "moderately important," and 4: "very important."

Statistical methods

Descriptive statistics were used to analyze the data. The basic characteristics of the participants were reported as frequencies and percentages. Frequencies and percentages were also used for the frequency and importance of content. The internal consistency and reliability of the questionnaire was evaluated using Cronbach's alpha. Data analyses were performed using the Statistical Package for the Social Sciences (SPSS) for Windows 18.0. The statistical significance level was set at a $p < 0.05$.

Results

Basic characteristics of participants

The overall response rate was 15.3% (112/731). Female participants comprised 64.3% of the respondents, and most respondents were currently working in university hospitals (31.3%). Regarding years of experience post-graduation, the largest group had less than five years of experience (30.4%). Most participants had performed electrodiagnosis in their current work (81.3%). Other characteristics are shown in Table 1.

Frequency of application and importance of the topics

The frequency of application of each of the ninety-six topics during clinical practice by participating physiatrists rated with a score of 4 ranged from 0% to 86.6%. The Cronbach's alpha for the frequency domain of the questionnaire was 0.959.

The ten most frequently encountered medical conditions with a score of 4 were low back pain (N=86.6%), osteoarthritis of the knee (N=83.0%), stroke (N=79.5%), spondylosis/spondylolisthesis (N=78.6%), radiculopathy (N=70.5%), chronic pain

Table 1. Basic characteristics of participants

Characteristics	N (%)
Gender	
Male	40 (35.7)
Female	72 (64.3)
Age (years)	
30-35	36 (32.1)
36-40	31 (27.7)
40-65	45 (40.2)
Currently working in the rehabilitation field	
Yes	109 (97.3)
Hospital type	
University Hospital	35 (31.3)
Center hospital	29 (25.9)
Provincial hospital	13 (11.6)
District hospital	8 (7.1)
Private hospital	20 (17.9)
Others	7 (6.2)
Years since rehabilitation board graduation	
Less than 5 years	34 (30.4)
5-9 years	30 (26.8)
10-15 years	18 (16.1)
16-20 years	8 (7.1)
More than 20 years	22 (19.6)
Rehabilitation clinic practice (days/week)	
0-3	46 (41.1)
4-7	66 (58.9)
Have a rehabilitation ward in their current hospital	
Yes	32 (28.6)
No ward, but rehabilitation inpatients can be admitted to other wards	42 (37.5)
No	38 (33.9)
Inpatient care	
Yes	104 (92.9)
Perform electrodiagnosis in current work	
Yes	91 (81.3)

(N=66.1%), inpatient consultation (N=61.6%), tendinopathy (N=59.8%), medical certificate for disability (N=58.9%), and fracture (N=55.4%). The five least frequently encountered medical conditions with a score of 1 were doping (N=57.1%), osteogenesis imperfecta (N=54.5%), toe pressure index (N= 50.9%), arthrogryposis multiplex congenita (N=48.2%), and juvenile idiopathic arthritis (N=42.9%). Details are shown in Table 2.

The importance of the ninety-six topics rated with a score of 4 by participants based on their experience ranged from 8% to 87.5%. The Cronbach's alpha for the importance domain of the questionnaire was 0.98. The ten most important medical conditions with a rating score of 4 were stroke (N=87.5%), osteoarthritis of knee (N=79.5%), low back pain (N=78.6%), chronic pain (N=75.9%), radiculopathy (N=75.0%), swallowing (N=68.8%), spondylosis/spondylolisthesis (N=67.9%), inpatient consultation (N=67.0%), spinal cord injury (N=66.1%), and medical certificate for disability (N=64.3%). The five least important medical conditions with rated score 1 were angiogram (N=20.5%), doping, osteogenesis imperfecta (N= 19.6%), toe pressure index (N=18.8%), and arthrogryposis multiplex congenita (N=17.0%). Details are shown in Table 2.

Discussion

Thai physiatrists provided valuable insights based on their clinical practice experience. Overall, while almost all topics were deemed important for physiatrists, the frequency of actually encountering these topics varied according to their different clinical practice experiences.

This discussion addresses the issues included in the EPAs of RCPhysiatrT for the year 2021. The results of this study highlight the high frequency and importance of stroke rehabilitation, which align with the RCPhysiatrT's 2021 recom-

Table 2. Frequency and importance of rehabilitation topics

Topic	Frequency (number (%))				Importance (number (%))			
	Never or rarely used the knowledge	Used the knowledge in a few cases	Used the knowledge sometimes	Used the knowledge very often	Unimportant	Somewhat important	Moderately important	Very important
Stroke	1 (0.9)	2 (1.8)	20 (17.9)	89 (79.5)	1 (0.9)	1 (0.9)	12 (10.7)	98 (87.5)
Amputee								
Amputee-upper limb	17 (15.2)	78 (69.6)	10 (8.9)	7 (6.3)	10 (8.9)	27 (24.1)	51 (45.5)	24 (21.4)
Amputee-lower limb (partial foot)	12 (10.7)	63 (56.3)	29 (25.9)	8 (7.1)	7 (6.3)	38 (33.9)	44 (39.3)	23 (20.5)
Amputee-lower limb (transtibial)	7 (6.3)	30 (26.8)	44 (39.3)	31 (27.7)	4 (3.6)	13 (11.6)	45 (40.2)	50 (44.6)
Amputee-lower limb (transfemoral)	6 (5.4)	46 (41.1)	41 (36.6)	19 (17.0)	4 (3.6)	17 (15.2)	45 (40.2)	46 (41.1)
Musculoskeletal conditions								
Low back pain	0 (0.0)	2 (1.8)	13 (11.6)	97 (86.6)	0 (0.0)	1 (0.9)	23 (20.5)	88 (78.6)
Systemic lupus erythematosus	16 (14.3)	82 (73.2)	10 (8.9)	4 (3.6)	8 (7.1)	55 (49.1)	38 (33.9)	11 (9.8)
Tendinopathy	1 (0.9)	7 (6.3)	37 (33.0)	67 (59.8)	1 (0.9)	5 (4.5)	39 (34.8)	67 (59.8)
Other soft tissue injuries	1 (0.9)	16 (14.3)	45 (40.2)	50 (44.6)	1 (0.9)	12 (10.7)	47 (42.0)	52 (46.4)
Musculoskeletal ultrasound	27 (24.1)	47 (42.0)	25 (22.3)	13 (11.6)	6 (5.4)	30 (26.8)	55 (49.1)	21 (18.8)
Rheumatoid arthritis	3 (2.7)	68 (60.7)	36 (32.1)	5 (4.5)	2 (1.8)	24 (21.4)	67 (59.8)	19 (17.0)
Seronegative spondyloarthropathy	7 (6.3)	86 (76.8)	18 (16.1)	1 (0.9)	5 (4.5)	32 (28.6)	61 (54.5)	14 (12.5)
Osteoarthritis of hip	1 (0.9)	69 (61.6)	36 (32.1)	6 (5.4)	2 (1.8)	19 (17.0)	69 (61.6)	22 (19.6)
Osteoarthritis of knee	1 (0.9)	5 (4.5)	13 (11.6)	93 (83.0)	1 (0.9)	5 (4.5)	17 (15.2)	89 (79.5)
Calcium pyrophosphate deposition diseases	9 (8.0)	76 (67.9)	23 (20.5)	4 (3.6)	3 (2.7)	45 (40.2)	49 (43.8)	15 (13.4)
Other arthritis	6 (5.4)	55 (49.1)	40 (35.7)	11 (9.8)	4 (3.6)	41 (36.6)	46 (41.1)	21 (18.8)

Table 2. Frequency and importance of rehabilitation topics (continued)

Topic	Frequency (number (%))				Importance (number (%))			
	Never or rarely used the knowledge	Used the knowledge in a few cases	Used the knowledge sometimes	Used the knowledge very often	Unimportant	Somewhat important	Moderately important	Very important
Orthopedic conditions								
Fracture	2 (1.8)	16 (14.3)	32 (28.6)	62 (55.4)	1 (0.9)	10 (8.9)	33 (29.5)	68 (60.7)
Post arthroplasty	1 (0.9)	20 (17.9)	40 (35.7)	51 (45.5)	1 (0.9)	9 (8.0)	41 (36.6)	61 (54.5)
Post-muscle/nerve/tendon transfer	7 (6.3)	75 (67.0)	21 (18.8)	9 (8.0)	1 (0.9)	26 (23.2)	53 (47.3)	32 (28.6)
Spondylosis/Spondylolisthesis	0 (0.0)	5 (4.5)	19 (17.0)	88 (78.6)	0 (0.0)	6 (5.4)	30 (26.8)	76 (67.9)
Osteopenia/ Osteoporosis	1 (0.9)	24 (21.4)	51 (45.5)	36 (32.1)	1 (0.9)	8 (7.1)	50 (44.6)	53 (47.3)
Brain disorders								
Traumatic brain injury	1 (0.9)	34 (30.4)	50 (44.6)	27 (24.1)	1 (0.9)	7 (6.3)	40 (35.7)	64 (57.1)
Parkinson's disease	1 (0.9)	52 (46.4)	46 (41.1)	13 (11.6)	1 (0.9)	15 (13.4)	67 (59.8)	29 (25.9)
Dementia	5 (4.5)	48 (42.9)	45 (40.2)	14 (12.5)	1 (0.9)	26 (23.2)	59 (52.7)	26 (23.2)
Brain tumor	4 (3.6)	78 (69.6)	23 (20.5)	7 (6.3)	1 (0.9)	30 (26.8)	57 (50.9)	24 (21.4)
Spinal cord disorders								
Axial pain	3 (2.7)	34 (30.4)	47 (42.0)	28 (25.0)	2 (1.8)	18 (16.1)	60 (53.6)	32 (28.6)
Myelopathy	2 (1.8)	55 (49.1)	43 (38.4)	12 (10.7)	1 (0.9)	13 (11.6)	48 (42.9)	50 (44.6)
Neoplastic	7 (6.3)	67 (59.8)	28 (25.0)	10 (8.9)	5 (4.5)	33 (29.5)	53 (47.3)	21 (18.8)
Myelodysplasia	27 (24.1)	76 (67.9)	8 (7.1)	1 (0.9)	11 (9.8)	53 (47.3)	32 (28.6)	16 (14.3)
Post-traumatic syringomyelia	28 (25.0)	78 (69.6)	6 (5.4)	0 (0.0)	8 (7.1)	42 (37.5)	46 (41.1)	16 (14.3)
Spinal cord injury	2 (1.8)	44 (39.3)	44 (39.3)	22 (19.6)	1 (0.9)	7 (6.3)	30 (26.8)	74 (66.1)
Urodynamic test for spinal cord injury	28 (25.0)	52 (46.4)	23 (20.5)	9 (8.0)	5 (4.5)	24 (21.4)	56 (50.0)	27 (24.1)
Peripheral neurological disorders								
Radiculopathy	1 (0.9)	3 (2.7)	29 (25.9)	79 (70.5)	1 (0.9)	4 (3.6)	23 (20.5)	84 (75.0)
Plexopathy	1 (0.9)	50 (44.6)	35 (31.3)	26 (23.2)	1 (0.9)	10 (8.9)	51 (45.5)	50 (44.6)
Motor neuron disease	6 (5.4)	80 (71.4)	22 (19.6)	4 (3.6)	1 (0.9)	23 (20.5)	53 (47.3)	35 (31.3)
Neuromuscular junction disorder	3 (2.7)	83 (74.1)	23 (20.5)	3 (2.7)	1 (0.9)	33 (29.5)	50 (44.6)	28 (25.0)
Myopathy	3 (2.7)	68 (60.7)	38 (33.9)	3 (2.7)	1 (0.9)	25 (22.3)	53 (47.3)	33 (29.5)
Mononeuropathy	2 (1.8)	29 (25.9)	37 (33.0)	44 (39.3)	2 (1.8)	12 (10.7)	36 (32.1)	62 (55.4)
Polyneuropathy	1 (0.9)	16 (14.3)	54 (48.2)	41 (36.6)	1 (0.9)	10 (8.9)	49 (43.8)	52 (46.4)
Peripheral demyelinating disease (GBS, CIDP)	4 (3.6)	60 (53.6)	39 (34.8)	9 (8.0)	1 (0.9)	15 (13.4)	45 (40.2)	51 (45.5)
Peripheral vascular diseases								
Ankle-brachial index	14 (12.5)	60 (53.6)	30 (26.8)	8 (7.1)	5 (4.5)	27 (24.1)	57 (50.9)	23 (20.5)
Toe pressure index	57 (50.9)	49 (43.8)	4 (3.6)	2 (1.8)	21 (18.8)	53 (47.3)	25 (22.3)	13 (11.6)
Doppler ultrasound	40 (35.7)	50 (44.6)	20 (17.9)	2 (1.8)	18 (16.1)	46 (41.1)	35 (31.3)	13 (11.6)
Angiogram	42 (37.5)	54 (48.2)	14 (12.5)	2 (1.8)	23 (20.5)	49 (43.8)	27 (24.1)	13 (11.6)
Deep vein thrombosis	7 (6.3)	63 (56.3)	33 (29.5)	9 (8.0)	4 (3.6)	12 (10.7)	49 (43.8)	47 (42.0)
Peripheral arterial disease	6 (5.4)	64 (57.1)	30 (26.8)	12 (10.7)	3 (2.7)	15 (13.4)	60 (53.6)	34 (30.4)
Lymphatic disease	8 (7.1)	76 (67.9)	25 (22.3)	3 (2.7)	2 (1.8)	35 (31.3)	58 (51.8)	17 (15.2)
Pulmonary embolism	12 (10.7)	84 (75.0)	12 (10.7)	4 (3.6)	4 (3.6)	18 (16.1)	45 (40.2)	45 (40.2)
Sports medicine and rehabilitation								
Sport nutrition	38 (33.9)	49 (43.8)	20 (17.9)	5 (4.5)	10 (8.9)	42 (37.5)	38 (33.9)	22 (19.6)
Doping	64 (57.1)	44 (39.3)	3 (2.7)	1 (0.9)	22 (19.6)	60 (53.6)	21 (18.8)	9 (8.0)
Ergogenic aids	34 (30.4)	49 (43.8)	20 (17.9)	9 (8.0)	16 (14.3)	37 (33.0)	37 (33.0)	22 (19.6)
Sports for people or athletes with disabilities	40 (35.7)	53 (47.3)	16 (14.3)	3 (2.7)	12 (10.7)	44 (39.3)	30 (26.8)	26 (23.2)
Sport-related concussion	44 (39.3)	51 (45.5)	15 (13.4)	2 (1.8)	13 (11.6)	36 (32.1)	42 (37.5)	21 (18.8)
Cancer rehabilitation								
Paraneoplastic syndrome	18 (16.1)	68 (60.7)	22 (19.6)	4 (3.6)	6 (5.4)	38 (33.9)	52 (46.4)	16 (14.3)
Palliative care	5 (4.5)	42 (37.5)	41 (36.6)	24 (21.4)	3 (2.7)	24 (21.4)	45 (40.2)	40 (35.7)
Lymphedema	6 (5.4)	72 (64.3)	28 (25.0)	6 (5.4)	3 (2.7)	34 (30.4)	58 (51.8)	17 (15.2)
Pain in cancer patient	8 (7.1)	50 (44.6)	42 (37.5)	12 (10.7)	3 (2.7)	21 (18.8)	54 (48.2)	34 (30.4)
Geriatric rehabilitation								
Cognitive impairment	3 (2.7)	23 (20.5)	57 (50.9)	29 (25.9)	1 (0.9)	13 (11.6)	52 (46.4)	46 (41.1)
Depression, anxiety	2 (1.8)	31 (27.7)	57 (50.9)	22 (19.6)	1 (0.9)	17 (15.2)	58 (51.8)	36 (32.1)

Table 2. Frequency and importance of rehabilitation topics (continued)

Topic	Frequency (number (%))				Importance (number (%))			
	Never or rarely used the knowledge	Used the knowledge in a few cases	Used the knowledge sometimes	Used the knowledge very often	Unimportant	Somewhat important	Moderately important	Very important
Pediatric rehabilitation								
Cerebral palsy	6 (5.4)	66 (58.9)	32 (28.6)	8 (7.1)	2 (1.8)	20 (17.9)	60 (53.6)	30 (26.8)
Spida bifida and myelomeningocele	27 (24.1)	69 (61.6)	11 (9.8)	5 (4.5)	11 (9.8)	30 (26.8)	43 (38.4)	28 (25.0)
Spinal muscular atrophy	41 (36.6)	67 (59.8)	1 (0.9)	3 (2.7)	12 (10.7)	37 (33.0)	46 (41.1)	17 (15.2)
Duchenne and Becker muscular dystrophy	36 (32.1)	69 (61.6)	5 (4.5)	2 (1.8)	11 (9.8)	34 (30.4)	48 (42.9)	19 (17.0)
Poliomyelitis	19 (17.0)	87 (77.7)	5 (4.5)	1 (0.9)	9 (8.0)	37 (33.0)	48 (42.9)	18 (16.1)
Arthrogryposis multiplex congenital	54 (48.2)	50 (44.6)	7 (6.3)	1 (0.9)	19 (17.0)	42 (37.5)	36 (32.1)	15 (13.4)
Autism	26 (23.2)	51 (45.5)	29 (25.9)	6 (5.4)	8 (7.1)	37 (33.0)	46 (41.1)	21 (18.8)
Juvenile idiopathic arthritis	48 (42.9)	55 (49.1)	7 (6.3)	2 (1.8)	18 (16.1)	47 (42.0)	34 (30.4)	13 (11.6)
Congenital limb deficiencies	30 (26.8)	68 (60.7)	12 (10.7)	2 (1.8)	16 (14.3)	29 (25.9)	45 (40.2)	22 (19.6)
Idiopathic scoliosis	3 (2.7)	56 (50.0)	36 (32.1)	17 (15.2)	2 (1.8)	13 (11.6)	58 (51.8)	39 (34.8)
Developmental dysplasia of the hip	38 (33.9)	64 (57.1)	7 (6.3)	3 (2.7)	12 (10.7)	29 (25.9)	54 (48.2)	17 (15.2)
Osteogenesis imperfecta	61 (54.5)	48 (42.9)	2 (1.8)	1 (0.9)	22 (19.6)	44 (39.3)	37 (33.0)	9 (8.0)
Hemophilia	38 (33.9)	63 (56.3)	9 (8.0)	2 (1.8)	14 (12.5)	30 (26.8)	44 (39.3)	24 (21.4)
Down syndrome	22 (19.6)	60 (53.6)	27 (24.1)	3 (2.7)	9 (8.0)	39 (34.8)	54 (48.2)	10 (8.9)
Advanced technology								
Transcranial magnetic stimulation	38 (33.9)	48 (42.9)	16 (14.3)	10 (8.9)	12 (10.7)	36 (32.1)	43 (38.4)	21 (18.8)
Others								
Burn rehabilitation	9 (8.0)	72 (64.3)	26 (23.2)	5 (4.5)	4 (3.6)	12 (10.7)	55 (49.1)	41 (36.6)
Chemodenervation/Chemoneurolysis	26 (23.2)	46 (41.1)	32 (28.6)	8 (7.1)	9 (8.0)	24 (21.4)	46 (41.1)	33 (29.5)
Spasticity	1 (0.9)	7 (6.3)	57 (50.9)	47 (42.0)	1 (0.9)	2 (1.8)	45 (40.2)	64 (57.1)
Multiple sclerosis	10 (8.9)	87 (77.7)	12 (10.7)	3 (2.7)	6 (5.4)	24 (21.4)	58 (51.8)	24 (21.4)
Post-polio syndrome	25 (22.3)	76 (67.9)	9 (8.0)	2 (1.8)	6 (5.4)	44 (39.3)	44 (39.3)	18 (16.1)
Amyotrophic lateral sclerosis	13 (11.6)	75 (67.0)	23 (20.5)	1 (0.9)	2 (1.8)	29 (25.9)	55 (49.1)	26 (23.2)
Chronic pain	0 (0.0)	5 (4.5)	33 (29.5)	74 (66.1)	0 (0.0)	3 (2.7)	24 (21.4)	85 (75.9)
Prosthesis and orthoses	3 (2.7)	24 (21.4)	41 (36.6)	44 (39.3)	1 (0.9)	6 (5.4)	44 (39.3)	61 (54.5)
Swallowing	1 (0.9)	7 (6.3)	45 (40.2)	59 (52.7)	1 (0.9)	4 (3.6)	30 (26.8)	77 (68.8)
Pressure ulcer	2 (1.8)	17 (15.2)	49 (43.8)	44 (39.3)	1 (0.9)	11 (9.8)	38 (33.9)	62 (55.4)
Sexual rehabilitation	46 (41.1)	58 (51.8)	7 (6.3)	1 (0.9)	16 (14.3)	43 (38.4)	37 (33.0)	16 (14.3)
Kinesiology	21 (18.8)	53 (47.3)	25 (22.3)	13 (11.6)	12 (10.7)	26 (23.2)	52 (46.4)	22 (19.6)
Chronic obstructive pulmonary disease	3 (2.7)	38 (33.9)	46 (41.1)	25 (22.3)	3 (2.7)	11 (9.8)	54 (48.2)	44 (39.3)
Medical certificate for disability	5 (4.5)	14 (12.5)	27 (24.1)	66 (58.9)	1 (0.9)	8 (7.1)	31 (27.7)	72 (64.3)
Electrodiagnosis	6 (5.4)	15 (13.4)	42 (37.5)	49 (43.8)	1 (0.9)	5 (4.5)	41 (36.6)	65 (58.0)
Diabetic foot examination	8 (7.1)	22 (19.6)	45 (40.2)	37 (33.0)	3 (2.7)	5 (4.5)	42 (37.5)	62 (55.4)
Interdisciplinary team meeting	8 (7.1)	33 (29.5)	46 (41.1)	25 (22.3)	2 (1.8)	8 (7.1)	50 (44.6)	52 (46.4)
Ability to care for patients in a rehabilitation ward	5 (4.5)	11 (9.8)	48 (42.9)	48 (42.9)	2 (1.8)	4 (3.6)	37 (33.0)	69 (61.6)
Management of functional impairment and disability	3 (2.7)	10 (8.9)	49 (43.8)	50 (44.6)	1 (0.9)	6 (5.4)	38 (33.9)	67 (59.8)
Coordinating patient referrals between hospitals	4 (3.6)	30 (26.8)	44 (39.3)	34 (30.4)	1 (0.9)	10 (8.9)	47 (42.0)	54 (48.2)
Inpatient consultation	3 (2.7)	8 (7.1)	32 (28.6)	69 (61.6)	2 (1.8)	5 (4.5)	30 (26.8)	75 (67.0)
Improving quality and safety	2 (1.8)	18 (16.1)	42 (37.5)	50 (44.6)	1 (0.9)	8 (7.1)	36 (32.1)	67 (59.8)

mendations. The prevalence of stroke in Thailand further underscores the importance of this focus.[11] According to a previous study in the U.S., evaluating and managing the rehabilitation needs of patients following stroke is essential for residency training in physical medicine and rehabilitation.[5]

Among pain-related conditions, low back pain, tendinopathy, other soft tissue injuries, osteoarthritis of the knee, spondylosis/spondylolisthesis, radiculopathy, and chronic pain were identified as having both high frequency and high importance. These findings support the EPAs of RCPhysiatrT which require evaluation of musculoskeletal pain, neuropathic pain, and chronic pain, and include skills such as dry needling, trigger point injection, and intra-articular or soft tissue injection. These results are also consistent with a previous

study from the U.S. which found that evaluating and managing patients with musculoskeletal syndromes requires a residency curriculum.[5]

In this study, spinal cord injury (SCI) cases were deemed highly important but infrequent, while urodynamic tests for spinal cord injury were regarded as both low frequency and low importance. This difference may be due to the working environment of the responders, as the institutions of only 28.6% had a rehabilitation ward, and in some hospitals, urologists conducted the urodynamic test. This finding indicates a need for increased attention to SCI patient care to prevent complications. Therefore, skills for coordinating patient referrals to higher-level hospitals with more specialized equipment and personnel should be considered for inclusion in the curriculum.

Electrodiagnosis has been rated as a frequently needed and important skill for physiatrists. In the current study, most participants had performed electrodiagnosis. In response, RCPhysiatrT has developed an online course for electrodiagnosis for all residents in Thailand to address this skill gap. Additionally, radiculopathy has been rated as a frequent and important condition, where electrodiagnosis is a key tool for confirming a radiculopathy diagnosis. According to a previous study in the U.S.[6], EPAs for electrodiagnosis provide useful evaluations in outpatient departments. Introducing residents to competency assessment in electrodiagnosis can help set learning goals and enhance understanding of feedback concepts.

Geriatric rehabilitation has been identified as a common and important domain relevant to the global society.[12] Other conditions in the geriatric domain, including osteoarthritis of the knee[13], stroke[14], and swallowing problems[15], are also prevalent in older patients in Thailand. However, RCPhysiatrT does not currently include geriatric rehabilitation in the main domain of EPAs. The data on the present situation in Thailand indicate that geriatric rehabilitation should be considered for incorporation in the next revision of the EPAs.

Pediatric rehabilitation has been rated as a less common and less important domain. This rating may be due to the low prevalence of pediatric diseases and to the low fertility rate in Thailand.[16] Cases are usually referred to university hospitals for treatment. However, encountering pediatric disabilities can be challenging, so the curriculum should include skills for residents on appropriate treatment of these patients.[17] While sports rehabilitation was also rated as less common and less important, orthopedic doctors might typically treat patients with sports-related conditions. However, exercise and sports for individuals with disabilities are emerging trends in rehabilitation.[18] Integrating these topics into the curriculum would highlight their significance to learners. Interestingly, in this research doping was rated as the least frequent and least important topic. This rating may be due to the fact that Thai physiatrists are not directly responsible for controlling doping. In Thailand, the Doping Control Agency has both the authority and the duty to regulate athletes to preserve the competitive spirit and to safeguard their health.[19]

The respondents in the present study were from various hospital types and had diverse experiences in the rehabilitation field in Thailand, providing practical data for program development and evaluation in rehabilitation medicine. Nevertheless, using this data should proceed cautiously due to the differing contexts in health systems and technologies across countries. Additionally, a limitation of this survey was that only 15% of RCPhysiatrT members participated in the study. Due to the small number of responses, subgroup analysis was not performed. Furthermore, most respondents were physiatrists working in university hospitals or center hospitals. Only patients who could access these hospitals were seen by physiatrists. The “frequency” and “importance” of contents were used as an indirect measure of the clinical competency needs of physiatrists in Thailand. However, patients who need rehabilitation may be unable to travel to hospitals providing those services. Additionally, conditions mentioned by the Board of Training and Examination in Rehabilitation Medicine can also be treated by doctors who are not physiatrists; it is thus possible that patients who need rehabilitation may not be referred to and be seen by physiatrists and will have thus missed opportunities to receive rehabilitation services.

Conclusions

Low back pain, osteoarthritis of the knee, stroke, spondylosis/spondylolisthesis, and radiculopathy are the most frequent conditions, and stroke, osteoarthritis of the knee, low back pain, chronic pain, and radiculopathy are essential contents for rehabilitation medicine according to the views of Thai physiatrists. This study provides updated essential information to help RCPhysiatrT to improve the curriculum in the next revision.

Disclosure

There are no conflicts of interest to report.

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