

Research article

Is there an agreement among the items of the Korean physical therapist licensing examination, learning objectives of class subjects, and physical therapists' job descriptions?

Min-Hyeok Kang¹, Oh-Yun Kwon², Yong-Wook Kim³, Ji-Won Kim⁴, Tae-Ho Kim⁵, Tae-Young Oh⁶,
Jong-Hyuk Weon⁷, Tae-Sik Lee⁸, Jae-Seop Oh^{9*}

¹Department of Physical Therapy, Inje University Graduate School, Gimhae, Korea; ²Department of Physical Therapy, Yonsei University, Wonju, Korea; ³Department of Physical Therapy, Jeonju University, Jeonju, Korea; ⁴Department of Physical Therapy, Nambu University, Gwangju, Korea; ⁵Department of Physical Therapy, Daegu University College of Rehabilitation Science, Daegu, Korea; ⁶Department of Physical Therapy, Silla University Medical Life Science College, Busan, Korea; ⁷Department of Physical Therapy, Joongbu University, Geumsan, Korea; ⁸Department of Physical Therapy, Dong-Eui Institute of Technology, Busan, Korea; ⁹Department of Physical Therapy, Inje University College of Biomedical Science and Engineering, Gimhae, Korea

Abstract

Purpose: To determine the agreement among the items of the Korean physical therapist licensing examination, learning objectives of class subjects, and physical therapists' job descriptions. **Methods:** The main tasks of physical therapists were classified, and university courses related to the main tasks were also classified. Frequency analysis was used to determine the proportions of credits for the classified courses out of the total credits of major subjects, exam items related to the classified courses out of the total number of exam items, and universities that offer courses related to the Korean physical therapist licensing examination among the surveyed universities. **Results:** The proportions of credits for clinical decision making and physical therapy diagnosis-related courses out of the total number credits for major subjects at universities were relatively low (2.06% and 2.58%, respectively). Although the main tasks of physical therapists are related to diagnosis and evaluation, the proportion of physiotherapy intervention-related items (35%) was higher than that of examination and evaluation-related items (25%) on the Korean physical therapist licensing examination. The percentages of universities that offer physical therapy diagnosis and clinical decision making-related courses were 58.62% and 68.97%, respectively. **Conclusion:** Both the proportion of physiotherapy diagnosis and evaluation-related items on the Korean physical therapist licensing examination, and the number of subjects related to clinical decision making and physical therapy diagnosis in the physical therapy curriculum, should be increased to ensure that the examination items and physical therapy curriculum reflect the practical tasks of physical therapists.

Keywords: Job description; Korea; Licensure; Learning; Physical therapists

Introduction

National health personnel licensing examinations assess whether graduates are equipped with the basic abilities required to

perform health-related tasks as specialists. So far, the items on the Korean physical therapist licensing examination have followed the learning objectives of each major course, but the issue of whether current trends in examination items appropriately address current clinical practices has been raised frequently. To address this issue and suggest solutions, the National Health Personnel Licensing Examination Board in Korea conducted its first physical therapist job analysis in 2000 [1]. Then, given the advancements in the physical therapy field and the

*Corresponding email: ysrehab@inje.ac.kr

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consequent formation of a greater number of subdivisions within the field, a second physical therapist job analysis was conducted in 2012 [2]. This is in line with job analysis studies in various healthcare sectors for similar reasons [3-6]. Although the second physical therapist job analysis addressed the question of whether specialized and detailed task analysis can be achieved, whether the national licensing examination assesses the qualities and abilities required of a physical therapist remains unknown.

According to the World Confederation for Physical Therapy, the qualities required of a physical therapist are measuring and evaluating patient functions, setting up therapy planning, and enhancing her/his own ability to predict therapy outcomes. Hence, the need for a new type of national physical therapist licensing examination arose, and the national physical therapist licensing examination was revised in 2014 to address this need. The newly revised national physical therapist licensing examination includes strengthened diagnosis, examination, and evaluation items, as well as clinical decision making items; it now assesses practical physical therapist task performance realistically. However, to assess practical physical therapist task performance effectively, it is necessary to identify whether the practical tasks of physical therapists are reflected in the examination and physical therapy curriculum. Therefore, the aim of the present study is to identify an agreement among the items of the Korean physical therapist licensing examination, learning objectives of class subjects, and physical therapists' job descriptions.

Methods

Job analysis

To determine the tasks perceived as important by physical therapists and tasks that are frequently conducted simultaneously, the materials used in the second physical therapist job analysis were studied [2]. First, based on the results of a survey of 392 physical therapists, elements corresponding to the tasks whose 'satisfaction of job description' and 'task frequency' scores were four points ('important' and 'frequently do') or higher were isolated. Second, elements corresponding to the tasks whose scores on both items were above the average were selected by calculating the mean score of two items, 'importance' and 'task frequency,' for each of the first selected elements. Through the above selection process, we isolated the following elements corresponding to tasks for which both importance and performance frequency were high: elements related to diagnosis and evaluation (patient information gathering, identification of history, system review, examination of the musculoskeletal system, special tests of the musculoskeletal system, examination of the neurologic system, special tests of the neu-

rologic system, goal setting, care plan, documentation of the care plan, explanation of the care plan, re-evaluation, comparison of the initial and final evaluations, modification of the goal, and modification of the care plan) and elements related to intervention (therapeutic exercise, manual therapy, and participation in preventive activities).

Korean physical therapist licensing examination

The subjects of the Korean physical therapist licensing examination were classified, and the proportion of items pertaining to each subject out of the total number of items was determined. Apart from the practical examination, the subjects of the Korean physical therapist licensing examination consist of 'foundations of physical therapy,' 'physical therapy diagnosis, examination, and evaluation,' 'physical therapy intervention,' and 'medical regulation' (Table 1), and they account for 60 items (30%), 50 items (25%), 70 items (35%), and 20 items (10%), respectively. One point is allotted to each item in the Korean physical licensing examination. To pass the examination, examinees should score at least 120 on the written examination without failing any of the subjects.

Learning objective

Twenty-nine colleges and universities in Korea were randomly sampled among the colleges and universities with a physical therapy department, and the physical therapy curricula of the selected institutes were analyzed. Since physical therapy-related curricula were revised in accordance with the changes to the physical therapist licensing examination system in 2014, we investigated major-related subjects for freshmen at the selected universities in 2014. Among the 29 selected colleges and universities, there were 18 four-year universities and 11 three-year colleges. Based on the collected data, major subjects in physical therapy at the colleges and universities were classified along the lines of the topics in the subjects of the national physical therapist licensing examination.

Data and statistical analysis

To determine an agreement between job descriptions and learning objectives and that between job descriptions and the national licensing examination, the subjects that included the learning objectives of tasks with high frequency and importance were classified. Proportions of the classified subjects in all major subjects in physical therapy at the selected colleges and universities were analyzed to verify an agreement between job descriptions and learning objectives. Furthermore, the proportions of items related to the classified subjects out of the total number of items on the Korean physical therapist licensing examination were analyzed to verify an agreement between job descriptions and the national licensing examina-

Table 1. Subjects of the Korean physical therapist licensing examination

Subject	Specific topic	Total items/fail grades
Foundations of physical therapy	Anatomy	60/24
	Biomechanics	
	Physical agents	
	Public health	
Physical therapy diagnosis, examination, and evaluation	Measurement and evaluation	50/20
	Physical therapy diagnosis	
	Clinical decision making	
	Physical therapy problem solving (diagnosis and evaluation)	
Physical therapy intervention	Physical therapy for musculoskeletal problems	70/28
	Physical therapy for neurologic problems	
	Physical therapy for cardiovascular and pulmonary problems	
	Physical therapy for integumentary problems	
	Physical therapy problem solving (intervention)	
Medical regulation	Medical regulation	20/8
Practical examination	Musculoskeletal system	60/36
	Neurologic system	
	Cardiovascular and pulmonary system	
	Integumentary system	
	Chronic and incurable disease	
	Community-based physical therapy	
	Measurement and evaluation	

tion. Finally, the proportion of universities that offer subjects related to the Korean physical therapist licensing examination at the selected colleges and universities was analyzed to investigate an agreement between learning objectives and the national licensing examination.

The agreement among job descriptions, learning objectives, and the national licensing system were analyzed using frequency analysis, and PASW SPSS ver. 18.0 (SPSS Inc., Chicago, IL, USA) was employed for statistical processing.

Results

The subjects that were related to jobs with high importance and performance frequency as identified in the job analysis were those pertaining to the following: physical therapy diagnosis, measurement and evaluation, clinical decision making, physical therapy of the musculoskeletal system, physical therapy of the neurologic system, and orthopedic physical therapy.

The two lowest average proportions of subject credit out of the total credits of major subjects were identified in the clinical decision making-related subjects (2.06%) and physical therapy diagnosis-related subjects (2.58%), as listed in Table 2. The number of items that included the learning objectives of subjects related to the elements corresponding to tasks with high importance and performance frequency accounted for 60% of the total items on the Korean physical therapist licensing examination. Among them, the learning objectives of physical

Table 2. Proportions of credits for a subject corresponding to tasks with high importance and performance, out of the total credits of major subjects (%)

Subject	%
Physical therapy diagnosis	2.58
Measurement and evaluation	3.51
Clinical decision making	2.06
Physical therapy of the musculoskeletal system	7.99
Physical therapy of the neurologic system	6.84
Orthopedic physical therapy	2.81

therapy diagnosis-related subjects, measurement and evaluation-related subjects, and clinical decision making-related subjects were included in the ‘physical therapy diagnosis, examination, and evaluation’ part of the examination, and they accounted for 25% of the total items. In contrast, the learning objectives of subjects pertaining to physical therapy of the musculoskeletal system, physical therapy of the neurologic system, and orthopedic physical therapy were included in the ‘physical therapy intervention’ part of the Korean physical therapist licensing examination, and they accounted for 35% of the total items.

The proportions of colleges and universities that offer physical therapy diagnosis-related subjects (58.62%) and clinical decision making-related subjects (68.97%) were relatively low compared to the figures for other subjects (Table 3).

Table 3. The proportion of 29 colleges and universities that offer courses related to each subjects of the national licensing examination (%)

Course related to items on the Korean physical therapist licensing examination	No. of colleges or universities (%)
Anatomy	29 (100.0)
Physiology	29 (100.0)
Neuroanatomy	29 (100.0)
Functional anatomy	24 (82.8)
Biomechanics	29 (100.0)
Introduction to physical therapy	28 (96.6)
Physical agents	29 (100.0)
Prosthetics and orthotics	27 (93.1)
Public health	28 (96.6)
Physical therapy diagnosis	17 (58.6)
Measurement and evaluation	23 (79.3)
Clinical decision making	20 (69.0)
Physical therapy of the musculoskeletal system	29 (100.0)
Orthopedic physical therapy	26 (89.7)
Physical therapy of the neurological system	29 (100.0)
Physical therapy of the cardiovascular and pulmonary system	27 (93.1)
Physical therapy of the integumentary system	21 (72.4)
Medical regulations	29 (100.0)

Discussion

The results of the present study show that despite the importance of physical therapy diagnosis and evaluation in physical therapists' perception and the high performance frequencies of associated tasks, the proportion of physical therapy diagnosis and evaluation-related items on the national licensing examination and the proportion of courses on the related subjects in the surveyed colleges and universities were relatively low.

Clinical decision making starts from clinical inference to determine the required examination and moves to evaluation and intervention for patients, which require physical therapists to apply knowledge and techniques, self-reflection, experience, and ability to change evaluations or interventions intuitively based on patients' characteristics [7]. In current clinical practice, the importance and performance frequencies of tasks related to clinical decision making that require complex thinking abilities have been increasing. Thus, it is very important to offer clinical decision making-related subjects in the physical therapy curriculum to foster and produce well-equipped physical therapists. Although content similar to clinical decision making is partially included in various subjects, it is necessary to offer subjects directly related to clinical decision making to enhance integrated and complex thinking abilities.

The above result indicates that physical therapy diagnosis-related tasks are essential for determining patient conditions to judge whether physical therapists can treat them, thus al-

lowing physical therapists to provide effective intervention based on patients' symptoms and conditions. Physical therapy curricula at universities in the USA, which is one of the advanced nations in terms of healthcare, had higher proportions of credits for evaluation-, differential diagnosis-, and prognosis basics-related subjects than credits for physical therapy intervention-related subjects [8-10]. This finding means that the U.S. emphasizes the importance of physical therapy diagnosis-related subjects and reflects the importance of these subjects in university curricula. Considering that one of the most important goals of university education is to produce well-equipped physiotherapy graduates, it is necessary to increase the number of physical therapy diagnosis-related subjects.

The results verified that the number of tasks related to diagnosis and evaluation was greater than the number of tasks related to physical therapy intervention after an analysis of the tasks characterized by high importance and high performance frequency. However, in the Korean physical therapist licensing examination, the number of physical therapy intervention-related items (70 items, 35%) is higher than the number of physical therapy diagnosis and evaluation-related items (50 items, 25%). In comparison, in the USA's national licensing examination for physical therapists, the proportion of foundation for evaluation, differential diagnosis, and prognosis-related items is 32.5%, which is higher than the proportion of physical therapy intervention-related items (28.5%) [11]. In addition, the importance of practice-related items has been emphasized, not only in the physical therapist licensing examination, but also in the other healthcare profession licensing examinations such as the medical licensing examination [12]. Considering that the proportion of items on the physical therapist licensing examination in the U.S. and the requirement that items on the national licensing examination should reflect practical job-related contents, it is necessary to increase the proportion of items related to physical therapy diagnosis and evaluation.

Only 68.97% of the surveyed colleges and universities offer courses related to clinical decision making-related subjects. However, in the USA, at least two semesters of six or seven credits of clinical decision making-related subjects are offered to students [8,9]. Furthermore, all surveyed universities in the USA offer foundation courses on evaluation, differential diagnosis, and prognosis, and integrate the subjects of examination, evaluation, diagnosis, and intervention to cover various topics and diseases in the aforementioned foundation courses [8-10]. Given the trends in physical therapy education in advanced nations, where the abilities of physical therapists are emphasized, it is essential to include clinical decision making- and physical therapy diagnosis-related items on the national licensing examination.

The present study has several limitations. First, the sample size of 29 universities is too small. Second, because the main tasks of physical therapists were determined based on the survey results from a job analysis conducted in a previous study, it is necessary to conduct job analysis based on the majors of physical therapists and type of hospital in the future to determine the main tasks of physical therapists.

In conclusion, the proportion of physiotherapy diagnosis and evaluation-related items, subjects corresponding to tasks with high importance and performance frequency, should be increased in the Korean physical therapist licensing examination to ensure that examination items reflect practical tasks performed by physical therapists. Finally, with consideration given to the tasks performed by physical therapists practically and the national licensing examination items, it is necessary to increase the number of clinical decision making- and physical therapy diagnosis-related subjects in the physical therapy curriculum.

ORCID: Min-Hyeok Kang: <http://orcid.org/0000-0002-1530-7254>; Oh-Yun Kwon: <http://orcid.org/0000-0002-9699-768X>; Yong-Wook Kim: <http://orcid.org/0000-0002-0311-9766>; Ji-Won Kim: <http://orcid.org/0000-0001-9881-2784>; Tae-Ho Kim: <http://orcid.org/0000-0001-7939-2139>; Tae-Young Oh: <http://orcid.org/0000-0002-7549-2375>; Jong-Hyuk Weon: <http://orcid.org/0000-0003-0774-5294>; Tae-Sik Lee: <http://orcid.org/0000-0003-3801-8911>; Jae-Seop Oh: <http://orcid.org/0000-0003-1907-0423>

Conflict of interest

No potential conflict of interest relevant to this article was reported.

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Supplementary material

Audio recording of abstract.

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