



Accreditation standards items of post-2nd cycle related to the decision of accreditation of medical schools by the Korean Institute of Medical Education and Evaluation

Kwi Hwa Park¹, Geon Ho Lee², Su Jin Chae^{3,*} and Seong Yong Kim^{4,*}

¹Department of Medical Education, Gachon University College of Medicine, Incheon, ²Department of Family Medicine, Daegu Catholic University School of Medicine, Daegu, ³Department of Medical Education, University of Ulsan College of Medicine, Seoul, and ⁴Department of Medical Education, Yeungnam University College of Medicine, Daegu, Korea

Purpose: The purpose of this study is to analyze the accreditation standards items related to the decision of accreditation of medical schools by the Korea Institute of Medical Education and Evaluation (KIMEE).

Methods: The subjects are medical schools in Korea that have received post-2nd cycle accreditation from the KIMEE between 2012 and 2016. Analyses were conducted for differences in accreditation decisions according to the characteristics of medical schools, sufficient ratios of basic standards items, and correlation between standards items related to accreditation decisions.

Results: After examining differences in accreditation decisions by the medical school's characteristics, there were no significant correlations between accreditation standard items and accreditation decisions. Second, according to the number of schools that sufficiently or insufficiently met each standard item, from the total of 97 standard items, 20 (20.6%) were sufficiently fulfilled by all medical schools. Standard item 2-5-2 demonstrated the highest insufficiency ratio. Third, with respect to the standard item that had an effect on accreditation decisions, standard item 1-5-1 showed the highest correlation with the sufficiency rate.

Conclusion: The validity of accreditation standards items was assured as this study evaluated the post-2nd cycle accreditation standards items regardless of each medical school's characteristics. The accreditation standards items were found to have a meaningful impact on the development of medical schools and qualitative improvement in medical education. The findings are expected to contribute to guaranteeing the validity and reliability of accreditation decisions and raising the quality of accreditation.

Key Words: Accreditation, Education, Medical school, Republic of Korea

Introduction

Medical schools carry the social responsibilities of improving the quality of medical care as well as of training healthcare workers required by the community [1]. During the last 30 years, medical schools in the Republic of Korea

have achieved rapid quantitative development, while also voluntarily making efforts to improve the academic environment and standards at medical schools [2]. As a part of such endeavors, the Korean Institute of Medical Education and Evaluation (KIMEE) was founded in 1998. It has carried out medical education accreditation from 2000, i.e., the 1st cycle (2000-2005), the 2nd cycle (2007-

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Corresponding Author: Seong Yong Kim (<https://orcid.org/0000-0003-3419-2699>)
Department of Medical Education, College of Medicine, Yeungnam University, 170, Hyunchong-ro, Nam-gu, Daegu, Korea
Tel: +82.53.640.6987 Fax: +82.53.628.4383 email: seongyong@ynu.ac.kr
Corresponding Author: Su Jin Chae (<https://orcid.org/0000-0003-3060-8933>)
Department of Medical Education, University of Ulsan College of Medicine, 88 Olympic-ro 43-gil, Songpa-gu, Seoul, Korea
Tel: +82.2.3010.4242 Fax: +82.2.3010.4234 email: edujin1@ulsan.ac.kr

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2010), and the post-2nd cycle (2012-2018). Since 2012, the concept of cycle has been abolished and named as post-2 cycle in order to ensure that the self-evaluation activities of universities are always and continuously carried out. It has developed and applied the current Accreditation Standards of the Accreditation Standards of KIMEE 2019 (2019-present) [3].

The purpose of medical education accreditation is to evaluate the educational quality of medical schools with the aim of improving the quality of medical education and pursuing excellence in medical education [4]. Following the establishment of KIMEE, the medical education accreditation structure became more sophisticated and systematic. With every accreditation cycle, universities became better prepared for the evaluation, securing more funds and technological facilities, and reinforcing academic curricula and procedures. Through such progress, the accreditation has succeeded in improving the academic environment and curricula of medical schools and has been ultimately acknowledged as a necessary system for promoting the quality of medical education [5]. The national government also recognized the need for accreditation authorities to evaluate institutions of higher education, leading to the designation of KIMEE as the accreditation authority under the Ministry of Education higher education program in 2014. In 2016, KIMEE was recognized as an accreditation body by the World Federation for Medical Education (WFME). The items in the accreditation standards follow the global standards set by the WFME, appropriately corresponding to Korea's medical education environment. New criteria were newly developed to reflect the excellence and diversity of medical education and to be applied as qualitative, rather than quantitative, standards [6].

The types of accreditation by KIMEE are accreditation, conditional accreditation, probation, and non-accreditation. The type of accreditation is determined by the Ac-

creditation Committee. Accreditation is given when a medical school satisfies the accreditation standards. Conditional accreditation is a temporary accreditation and is given when a medical school fails to fully satisfy the accreditation standards but is capable of improving within 1 year. Probation is a type of non-accreditation and is issued when a medical school fails to satisfy accreditation standards, and improvement in the short term is difficult. Non-accreditation is given when a medical school fails to satisfy accreditation standards or does not have due reasons for the shortcomings. Accreditation is valid for 6 or 4 years depending on the Accreditation Committee's decision [7].

According to a meta-evaluation study of post-2nd cycle accreditation [8], the standards employed were developed on the premise that they would improve the quality and reinforce the responsibility of medical services and were deemed to demonstrate high validity. Despite the findings from the meta-evaluation, some medical schools raised questions about the reliability of the final decisions and accreditation type [9]. In this study, it is assumed that among the accreditation standards items, there may be standards items that medical schools must meet as they are fundamental to improving the quality of medical education and that fundamental standards items should be weighted.

This study explores the following research questions: First, is there any association between the medical school's characteristics and accreditation decisions? Second, what is the difference between sufficient and insufficient ratios for each accreditation standard item? Third, which standards items had an association with the accreditation decisions?

Methods

1. Study design

This study used a descriptive research design to analyze the relationship between final decisions on medical schools and accreditation standards items based on the post-2nd cycle.

2. Setting

This study was conducted on the 42 medical schools in Korea that participated in the post-2nd cycle accreditation organized by KIMEE between 2012 and 2016. During this period, four medical schools received two rounds of evaluation, bringing the total data to 43. However, one of the four medical schools was given non-accreditation, and thus, was excluded from the final analysis.

3. Variables

A list of unidentified medical schools was provided by KIMEE. The data included the accreditation year, year of establishment, founding entity, faculty size, student enrollment quota, the sufficient ratio for each of the 97 basic standards items, and the decisions of accreditation.

4. Data sources/measurement

The characteristics of the medical schools are summarized in Table 1. As seen in Supplement 1, the accreditation standards include 97 basic standards items and 44 excellency standards items, but only the basic standards items were examined in this study.

5. Statistical methods

Descriptive, Pearson, and χ^2 analyses were carried out using IBM SPSS ver. 22.0 (IBM Corp., Armonk, New York, USA). The following analyses were conducted based on

Table 1. Characteristics of Accredited Medical Schools

Characteristic	No. of medical schools
Accreditation year	
2012	6
2013	7
2014	13
2015	11
2016	5
Year of establishment	
1970 or before	15
1971-1990	18
After 1991	9
Founding entity	
Public	11
Private	31
Faculty size	
200 or less	20
201-300	11
301-500	5
More than 500	6
Student enrollment quota	
50 or less	17
51-100	14
More than 100	11

the data. First, differences between accreditation decisions according to medical school's characteristics were analyzed. Accreditation decisions were partial 4-year accreditation and full 6-year accreditation.

Second, the sufficient ratio of standards items of medical schools was found by calculating how many of the 97 basic standards items were "sufficiently" met. Based on the calculation, the ratios of sufficient for six evaluation areas were computed.

Third, in respect to the 97 basic standards items, this study examined whether the sufficient status of particular standards items had effects on that of other standards items. For this analysis, excluding the standards items that all medical schools demonstrated "sufficient," the correlation between a single standard item and the added value of all other standards items was determined.

6. Ethics statement

This study was approved by the Institutional Review Board of Yeungnam University Hospital (IRB approval no., YUMC-2021-11-069).

Results

1. Differences in accreditation decisions according to medical school's characteristics

Table 2 summarizes whether there were differences in accreditation decisions according to characteristics accreditation year, year of establishment, founding entity, faculty size, and student enrollment quota. The analysis determined that there were no significant differences in

accreditation decisions in respect to the characteristics: accreditation year ($\chi^2=5.956$, $p=0.202$), year of establishment ($\chi^2=0.974$, $p=0.615$), founding entity ($\chi^2=0.287$, $p=0.592$), faculty size ($\chi^2=0.864$, $p=0.834$), and student enrollment quota ($\chi^2=1.200$, $p=0.549$). Medical school's characteristics did not have a meaningful impact on accreditation decisions.

2. Analysis of sufficiency and insufficiency of accreditation standards

The results of medical schools having 100% sufficiently met each accreditation standard item are reported in Supplement 2. All medical schools "sufficiently" met 20 (20.6%) of the 97 basic standards items. Specifically, four pertained to the "operational system of the university" area, one in "basic medical education" area, five in "students" area, five in "faculty" area, and five in "facilities and

Table 2. Relationship among the Medical School's Characteristics and Accreditation Decisions

Characteristic	Accreditation decisions (%)		χ^2	p-value
	6-Year	4-Year		
Accreditation year				
2012	3 (50.0)	3 (50.0)	5.956	0.202
2013	4 (57.1)	3 (42.9)		
2014	6 (46.2)	7 (53.8)		
2015	7 (63.6)	4 (36.4)		
2016	0	5 (100.0)		
Year of establishment				
1970 or before	8 (53.3)	7 (46.7)	0.974	0.615
1990 or before	7 (38.9)	11 (61.1)		
After 1990	5 (55.6)	4 (44.4)		
Founding entity				
Public	6 (54.5)	5 (45.5)	0.287	0.592
Private	14 (45.2)	17 (54.8)		
Faculty size				
200 or less	10 (50.0)	10 (50.0)	0.864	0.834
300 or less	6 (54.5)	5 (45.5)		
500 or less	2 (40.0)	3 (60.0)		
More than 500	2 (33.3)	4 (66.7)		
Student enrollment quota				
50 or less	9 (52.9)	8 (47.1)	1.200	0.549
100 or less	5 (35.7)	9 (64.3)		
More than 100	6 (54.5)	5 (45.5)		

equipment” area.

On the other hand, in Table 3, the insufficient ratio was the highest for standard item 2-5-2. (Is the medical school accordingly improving its curriculum followed by reviewing and updating of phase and graduate outcomes?) Over 30% of medical schools did not sufficient seven standards items, including five in the area of “basic medical education,” one in “operational system of the university” area, and one in “faculty” area.

3. Analysis of correlation among accreditation standards items

Table 4 presents four accreditation standards items that displayed significant correlations with other standards items. Standard item 1-5-1 (Does the medical school have an organization that conducts self-assessment for quality management and improvement and does the medical

school operate this organization appropriately?) showed the highest correlational significance.

Discussion

This study analyzed accreditation standards items that related to the decision of accreditation of medical schools underwent post-2nd cycle accreditation by KIMM. The study results implications are as follows. First, the medical schools are sensitive to the accreditation year when they are evaluated during accreditation period. Also, there is a lot of interest in whether there is a difference in accreditation decisions depending on founding entity, number of professors, number of students, and year of establishment [9]. In study results, there were no significant correlations among evaluation year and medical

Table 3. Standards Items of over 30% Unfulfilled Ratio

Standards items	Unfulfilled (%)
2-5-2. Is the medical school accordingly improving its curriculum followed by reviewing and updating of phase and graduate outcomes?	30 (71.4)
2-3-5. Are the outcomes of the both course and lesson defined and reflected in instruction?	19 (45.2)
2-5-1. Is the medical school reviewing course outcomes periodically and reflecting results in curriculum improvement?	18 (42.9)
2-1-3. Is the curriculum appropriate for achieving educational objectives and graduate outcomes?	15 (35.7)
2-5-3. Is the medical school conducting an overall evaluation on curriculum for improvement?	14 (33.3)
1-4-1. Is there an established medical school development plan and is the support from the university or board of foundation appropriate?	13 (31.0)
4-3-2. Duration of professor participation in medical education	13 (31.0)

Table 4. Correlation between Accreditation Standards Items Related to Accreditation Decisions

Standards items	Pearson		Sufficient (%)
	Coefficient	p-value*	
1-5-1. Does the medical school have an organization that conducts self-assessment for quality management and improvement and does the medical school operate this organization appropriately?	0.474	0.001	33 (76.7)
2-1-1. Does the medical school have the educational aims and objectives that reflect its educational mission and unique characteristics?	0.444	0.003	38 (88.4)
2-3-16. Are the instructional, learning and assessment methods appropriate to deliver the curricula of medical humanities?	0.441	0.003	36 (83.7)
1-4-3. Are there appropriate participations of alumni or communities in medical school development and efforts of the medical school to encourage their active participation?	0.425	0.005	40 (93.0)

*p<0.01.

schools' characteristics and accreditation decisions. As the standards items used in post-2nd cycle accreditation seek to evaluate medical schools regardless of their characteristics, it can be said that the validity of the standards items is upheld.

Second, according to the analysis of the number of standards items sufficiently met, all involved medical schools satisfied 20 of the 97 standards items applied, regardless of accreditation decisions. By area of evaluation, four standards items were concerned with the "operational system of the university" area, one with the "basic medical education curriculum" area, five with the "student" area, five with the "faculty" area, and five with the "facilities and equipment" area. These standards items may be either used as required criteria in evaluating newly established medical schools or as grounds for deciding accreditation types for medical schools. On the other hand, in the area of basic medical education curriculum, the highest number of universities had "insufficient" standards items. Standard item 2-5-2 in the basic medical education curriculum displayed the greatest ratio of insufficiency (71.4%). Five of the seven standards items, the top 30% of insufficiency, were in this area. These were related to the principles of curriculum, development of principles for implementing curriculum, application, continuous evaluation, and improvement of curriculum performance.

These results are similar to those of Hunt et al. [10], who studied the relationship between accreditation standards items of Liaison Committee on Medical Education and severe action decisions (SAD). According to their study, the factors affecting SAD were curriculum management, comparability across instructional sites, and monitoring curriculum content. These insufficiently met standards are crucial criteria not only for developing universities but also for raising and substantializing the quality of medical education in general. Given this importance, assigning weighted values to these standards

items should be considered.

Lastly, analyzing the correlation between individual standards items revealed that standard item 1-5-1 (Does the medical school have an organization that conducts self-assessment for quality management, and improvement and does the medical school operate this organization appropriately?) had a significant impact on other standards items, implying the importance of constant maintenance of quality in medical schools. Since 2012, the KIMEE has required each medical school in Korea to submit an interim report every 2 years after certification. The interim reports are reviewed separately [11]. Medical schools should understand the purpose of continuous quality improvement and provide support so that quality improvement can be achieved smoothly.

In conclusion, the validity of accreditation standards items was assured, as this study evaluated the post-2nd cycle accreditation standards items regardless of each medical school's characteristics. The accreditation standards items were found to have a meaningful impact on the development of medical schools and qualitative improvements in medical education. This study is significant in that it examined the decision results of all medical school's that received post-2nd cycle accreditation. The findings may contribute to supporting the validity and reliability of accreditation results, and be used as a reference for on-site evaluations, as well as for improving medical education at medical schools preparing for accreditation.

Supplementary materials

Supplementary files are available from <https://doi.org/10.3946/kjme.2023.244>

Supplement 1. Accreditation Standards of Post-2nd Cycle.
Supplement 2. Completely Fulfilled Accreditation Standards Items.

ORCID:

Kwi Hwa Park: <https://orcid.org/0000-0002-0008-2400>;

Geon Ho Lee: <https://orcid.org/0000-0003-0696-3804>;

Su Jin Chae: <https://orcid.org/0000-0003-3060-8933>;

Seong Yong Kim: <https://orcid.org/0000-0003-3419-2699>

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