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How Doctors in Charge of Medical Education Recognize and Use Clinical Practice Guidelines in Education: A Cross-Sectional Study

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Background: The objective of this study was to investigate the association of the recognition of the importance and the effectiveness of clinical practice guidelines with the use of them among doctors in charge of medical education.

Methods: A cross-sectional questionnaire survey was conducted on doctors in charge of medical education at Tokyo Women's Medical University. Multiple logistic regression adjusted for sex, age, and position was used to assess the association between the recognition and use of clinical practice guidelines for education among the participants.

Results: Data from 89 respondents (response rate: 72.4%) were analyzed. The odds ratios (ORs) for using the guidelines in lectures (OR = 4.19, $p < 0.05$) and clinical clerkships (OR = 4.26, $p < 0.05$) were significantly greater among doctors who thought that "clinical practice guidelines are important in medical education" compared with those who did not. The OR for using the guidelines in clinical clerkships was also significantly greater among doctors who thought that "clinical practice guidelines are effective in medical education" compared with those who did not (OR = 6.46, $p < 0.05$).

Conclusion: The results of this study suggest that doctors who recognize the importance and effectiveness of clinical practice guidelines tend to use them more frequently in medical education.

Keywords: clinical practice guidelines, lectures, clinical clerkships, medical education

Introduction

Clinical practice guidelines are defined as "recommended documents with holistic evidence evaluated by systematic reviews to support healthcare user and provider decision-making on critical health issues that balance

benefits and harms".¹ In recent years, clinical practice guidelines have become increasingly important for medical education.² For example, the Ministry of Education, Culture, Sports, Science and Technology of Japan recommends that educators (e.g., doctors in charge of medical education) should include such guidelines in the model

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core curriculum in medical education.³ Additionally, guidelines are an invaluable instrument for learning about evidence-based medicine.⁴ Therefore, clinical practice guidelines are considered effective educational tools that play an important role in continuing medical education.⁵

However, how doctors in charge of medical education recognize the importance and effectiveness of such guidelines and use them in medical education remains unclear. Previous studies have suggested the presence of a relationship between doctors' perceptions of guidelines and their use in clinical practice.⁶⁻⁸ Similarly, in medical education, the use of guidelines may also be affected by how the guidelines are recognized by doctors in charge of medical education.⁹ Accordingly, the objective of this study was to investigate how doctors in charge of medical education recognize and use clinical practice guidelines exploratory and examine the association between the recognition and use of clinical practice guidelines among doctors in charge of medical education.

Materials and Methods

A cross-sectional questionnaire survey was conducted on the department heads or doctors in charge of medical education at the main hospital and two branches of Tokyo Women's Medical University (total: 123 departments) in December 2019. All departments, listed on each hospital's website in 2019, were approached to participate in this survey via mail. We asked either the department head or doctor in charge of medical education in each department for a reply. The response period was 1 month.

The use status of clinical practice guidelines in medical education (e.g., lectures, clinical clerkships) was assessed by one original item ("Do you use clinical practice guidelines in lectures for medical students? Yes or No?"). Recognition of the importance and effectiveness of clinical practice guidelines was also measured by one original item ("How important (effect) do you think clinical practice guidelines are?"), the responses to which were classified into two groups: important (effect) and not important (effect). In addition, the background characteristics of the respondents, including sex, age, and job position, were also assessed.

The proportions of participants who used the guidelines in medical education were compared between the two groups based on recognition of the guidelines (e.g., important/not important and effective/not effective). Multiple logistic regression was used to estimate the odds ratios (ORs) for using the guidelines in medical education in both bivariate and multivariate analyses adjusted for demographic covariates (e.g., sex, age, job position). JMP[®] 15 (SAS Institute Inc., Cary, NC, USA) was used for all statistical analyses. We tested statistical significance as two-tailed, with $p < 0.05$ as a level of statistical significance. This study was approved by the Research Ethics Committee at Tokyo Women's Medical University (No. 5423). Before starting the study, we explained the study to all participants in a document and then obtained their written informed consent. The anonymity of the participants was protected. Participants could withdraw from the study at any time.

Results

Data were collected from 89 respondents (response rate: 72.4%). From data with no missing data, 45 (51.1%) and 54 (62.1%) answered that they used clinical practice guidelines in lectures and clinical clerkships for medical students, respectively. **Table 1** shows the demographic characteristics of and recognition of clinical practice guidelines among doctors in charge of medical education at Tokyo Women's Medical University. Most of the participants were male (78.6%) and between the ages of 50 and 69 years (54.9%). The most common position was chief. Over 60% of the respondents recognized the importance and over 70% of the effectiveness of clinical practice guidelines, whereas less than 55% knew that the guidelines were included in the model core curriculum. According to the chi-square test, there were no significant differences in the use of clinical practice guidelines in lectures or clinical clerkships among gender (i.e., male and female), age (i.e., 30-49 and 50-69 years old), and position (i.e., chief and others), respectively.

Table 2 shows the cross-sectional association between the recognition and use of clinical practice guidelines in medical education among doctors. The proportions of doctors using the guidelines in lectures (OR = 4.19, $p < 0.05$) and clinical clerkships (OR = 4.26, $p < 0.05$) were

Table 1. Demographic characteristics and recognition of clinical practice guidelines among doctors (n = 89, 72.4%).

	n ^(a)	%
Sex		
Male	66	78.6
Female	18	21.4
Age (years)		
50-69	45	54.9
30-49	37	45.1
Position		
Chief	46	52.9
Others	41	47.1
Do you think clinical practice guidelines are important in medical education?		
Important	52	60.5
Not Important	34	39.5
Do you think clinical practice guidelines are effective in medical education?		
Effective	62	72.1
Not effective	24	27.9
Did you know that clinical practice guidelines are included in the model core curriculum?		
I knew	46	54.1
I didn't know	39	45.9
Do you use clinical practice guidelines in lectures for medical students?		
Yes	45	51.1
No	43	48.9
Do you use clinical practice guidelines in clinical clerkships for medical students?		
Yes	54	62.1
No	33	37.9

(a) The number of respondents for some variables was small because of missing values.

significantly greater among those who thought that “clinical practice guidelines are important in medical education” compared with those who did not. The proportion of doctors using the guidelines in clinical clerkships was also significantly greater among those who thought that “clinical practice guidelines are effective in medical education” compared with those who did not (OR = 6.46, $p < 0.05$). No significant association was found between the use of the guidelines and the knowledge that they were included in the model core curriculum.

Discussion

To the best of our knowledge, this is the first study to examine the association between the recognition and use of clinical practice guidelines among doctors in charge of medical education. The findings revealed that doctors who recognize the importance and effectiveness of clinical practice guidelines tend to use them more frequently in medical education. Previous studies have reported that doctors who recognize the importance of guidelines tend to use them in clinical practice;^{6,8} the present finding regarding the association between how doctors recognize and use clinical practice guidelines in medical education

Table 2. The cross-sectional association between the recognition and use of clinical practice guidelines in medical education among doctors (n = 89).

	In lectures for medical students				In clinical clerkships for medical students			
	Crude		Adjusted ^(a)		Crude		Adjusted ^(a)	
	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
Do you think clinical practice guidelines are important in medical education?								
Important	3.54	1.44-9.22	4.19	1.55-12.27	4.67	1.74-14.19	4.26	1.49-13.72
Not important	1.00		1.00		1.00		1.00	
Do you think clinical practice guidelines are effective in medical education?								
Effective	2.28	0.87-6.34	2.39	0.84-7.32	6.15	1.88-27.95	6.46	1.86-30.70
Not effective	1.00		1.00		1.00		1.00	
Did you know that clinical practice guidelines are included in the model core curriculum?								
I knew	1.57	0.67-3.75	1.52	0.62-3.78	1.29	0.53-3.18	1.44	0.58-3.70
I didn't know	1.00		1.00		1.00		1.00	

(a) Adjusted for sex, age, and position.

OR, odds ratio; CI, confidence interval.

supports those previous findings.

Our results showed that the doctors who used clinical practice guidelines in lectures and clinical clerkships were 51.1%, and 62.1%, respectively. It may be similar to the rate in clinical practice: Butzlaff et al. reported that 55.3% of doctors used the guidelines in their clinical practice.¹⁰ However, considering the usefulness of using the guidelines for medical education, it may be needed to increase the utilization rate of the guidelines for education.¹¹

The current results showed that less than 55% of the participants knew that the guidelines were included in the model core curriculum, which was lower than expected. Although knowing that guidelines were included in the model core curriculum had no significant association with the use of guidelines in medical education in the current study, we should interpret this result carefully. For example, Cabana et al. indicated that how correctly doctors acknowledge a guideline's existence was important to whether or not they followed the guidelines in clinical practice.⁶

This study had several limitations. First, as this was a cross-sectional study, we could not determine the causality between the recognition and use of clinical practice guidelines among doctors in charge of medical education. Second, the study participants were doctors from only one university in Japan, which limits the generalization of the findings. In the future, additional research needs to be conducted in a larger sample of medical universities. Third, the 95% confidence intervals (CIs) for the ORs for using the guidelines in medical education were wide (e.g., the 95%CI for the OR for clinical clerkships was 1.86-30.7). The instability of this model could have been caused by the small sample size. Therefore, larger sample sizes will be necessary for future studies. Fourth, in this study, we did not assess why the doctors think the guidelines are important or not important, or how they use the guidelines in medical education. This information could be useful to understand how doctors recognized and used clinical practice guidelines in medical education. Accordingly, a qualitative study such as conducting interviews with doctors about the recognition or the use of the guidelines would also be needed. Fifth, because we focused on the use of clinical practice guidelines in medical education, the current study did not investigate the asso-

ciation of how the doctors recognized the guidelines in clinical practice with the use of the guidelines for medical education. In the future, we should examine these associations. Sixth, this study focused only on pre-graduate education. In the future, it will also be necessary to investigate the recognize and use of clinical practice guidelines among doctors in post-graduate education, for development of medical education.

Conclusion

The results of this study suggest that doctors who recognize the importance and effectiveness of clinical practice guidelines tend to use them more frequently in medical education. These findings could promote the use of clinical practice guidelines and contribute to improvements in medical education.

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Conflicts of Interest: The authors declare no conflicts of interest.

Author Contributions: All authors conceived of the study, developed study design and collected data. EO and AS conducted literature search, analyzed, and interpreted data, and prepared the first draft. All authors reviewed the manuscript. All authors read and approved the final manuscript.

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Ethical Approval: This study was approved by the Research Ethics Committee, Tokyo Women's Medical University (No. 5423).

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