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地域医療基盤開発推進研究事業

医学部教育、臨床研修制度、専門研修を縦断するカリキュラムの
作成と医師養成の在り方に関する研究

平成20～21年度 総合研究報告書

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目次

1. 研究要旨

① 卒後の臨床研修に対する日本の医学部教育環境と準備度

内容：臨床研修重点化のため、近年モデル・コア・カリキュラムが日本の医学部教育に導入された。今回我々は、新卒医師の卒後臨床研修に対する準備度についての意識を調査し、教育環境および医師国家試験（NMLE）合格率と研修準備度との関連性を評価した。

方法：郵送による断面的調査を行い、2429 名の PGY-1（卒後年数 1 年）の研修医からデータを得た（回答率は 36%）。日本の 80 の大学における学習環境の評価には Dundee Ready 教育環境評価（DREEM）の質問票が用いられた。臨床能力準備度は、米国医学部（医科大学）卒業生協会のアンケートより採用された 6 つの質問に基いて評価された。NMLE 合格率のデータは厚生労働省から得た。

結果：研修医のうち一般臨床技術において準備ができていたと感じた者は 17%、診断の基礎知識と医学管理一般においては 29%、コミュニケーションスキルにおいては 48%、EBM 関連スキルにおいては 19%、技術的手技においては 54%、身体検査に必要なスキルにおいては 37%であった。卒業生の準備の認識については、大学間でかなりの差が認められた。全臨床分野における研修準備度とより良い教育環境の間には有意な正の相関が認められたが（全て $p<0.01$）、NMLE 合格率はどの臨床分野に対する研修準備度とも有意な関連を示さず、合格率と教育環境との関係についても同様であった（全て $p>0.05$）。

結論：大学間の教育環境の差が、卒後臨床研修に際し、医学生が自己認識する研修準備度の差の一因となっている可能性が考えられる。従来のカリキュラムからより臨床に重点をおいたカリキュラムへ、または国家試験のありかたついての見直しが、医学部卒業生の準備度の問題に取り組むためには必要と考えられる。また、今回の研究では、実践に対する準備度と NMLE との間の関連の低さを認めていた。自己認識による準備度が外部評価による準備度と同様である場合、NMLE

は現在重点がおかれている部分ではなく実際の臨床能力を反映するように見直されるべきであろう。

② 日本における大学病院と市中教育病院の教育環境

背景：以前の調査結果で見られた、日本の市中教育病院におけるレジデント（研修医）の満足度の高さは、大学病院と比較してその教育環境が良いことも反映しているのではないかとも考えられる。

目的：大学病院と市中教育病院の教育環境の比較

デザイン：断面的調査

参加者：調査用紙は医師レジデント1年目である6725名に郵送された。

方法：教育研究病院の教育環境評価には、信頼性・妥当性の高い方法として、卒後病院教育環境評価（PHEEM）が用いられた。

主要な結果：計2429名のPGY-1（卒後年数1年）研修医（38%は女性）が、アンケートに回答した（回答率36%）。80の大学病院のPHEEMの平均総合スコアは77～125（平均99）の範囲で、255の市中教育病院の平均スコアは46～149（平均102）の範囲であった。大学病院と比較して市中教育病院のPHEEMスコアが有意に高かった（p=0.001）。また、最もスコアの高かった10の病院のうち、大学病院は１つで、他９つは市中教育病院であった。PHEEMの3領域で、研修の独自性および教育プログラムの質に関する平均スコアが、市中教育病院に対しては有意に高かった。一方、２タイプの病院間で、社会的援助に対する平均スコアに有意差は認められなかった。

結論：教育環境の差が、日本における市中教育病院レジデントの満足度の高さにつながり、新卒後医学教育プログラム導入後に大学病院から市中教育病院へ多数の研修医が移動した理由の一つとなっている可能性がある。

③ 日本の新しい卒後医学教育プログラムの救急医療におけるケアの質への影響

目的：新旧卒後医学教育プログラム（PGME）修了の医師間で、救急医療におけるケアの質および救急ケアへの意識を比較する。

デザイン： 断面的調査

参加者： 卒後 4～9 年の医師 279 名中 208 名の回答を得た（75%）。

方法：26 場面の様々な急性病態に対する治療選択に関する質問票を用いて救急医療におけるケアの質の評価を行った。各質問には 6 つの選択肢が用意され、そのうち正解は 1 つである。効果量は、総スコアの差をスコア分布の標準偏差で割り求めた。救急医療における意識は、様々な救急医療状況で急性疾患の患者を治療する際、どれくらい自信を持って行っているかについて尋ね、自己報告した 4 段階により評価した。

結果：ケアの質の平均スコアは、旧 PGME プログラム群（12.8）と比較し、新 PGME 群（15.3）で有意に大きかった。治療分析においてスコアの差は 2.5 ($p<0.01$)で、そのエフェクト・サイズは中程度の差（0.47）が存在すると考えられた。個々の医師の共変量について補正がなされた総スコアの直線回帰にても同様の結果を示し、調整後スコア差は 2.5（$p<0.01$）、調整後エフェクト・サイズは 0.47 であった。救急医療における意識についての 4 項目に関しては、新 PGME プログラム群では、旧 PGME プログラム群と比較し、有意に自信が増す傾向が示された（全て $p<0.05$）。

結論：日本における新 PGME プログラム修了医師は、旧 PGME プログラム修了医師と比較して、救急医療においてより高い質のケアを提供し、より大きな自信を持っていると考えられる。

2. 卒後の臨床研修に対する日本の医学部教育環境と準備度

Undergraduate Educational Environment, Preparedness for Postgraduate Clinical Training, and Pass Rate on the National Medical Licensure Examination in Japan

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Running head: Preparedness for Postgraduate Clinical Training in Japan
Conflict of interest: None declared

Abstract

Background: We investigated the views of newly graduating physicians on their preparedness for postgraduate clinical training, and evaluated the relationship of preparedness with the educational environment and the pass rate on the National Medical Licensure Examination (NMLE).

Methods: Data were obtained from 2429 PGY-1 physicians-in-training (response rate, 36%) using a mailed cross-sectional survey. The Dundee Ready Education Environment Measure (DREEM) inventory was used to assess the learning environment at 80 Japanese medical schools. Preparedness was assessed based on 6 clinical areas related to the Association of American Medical Colleges Graduation Questionnaire.

Results: Only 17% of the physicians-in-training felt prepared in the area of general clinical skills, 29% in basic knowledge of diagnosis and management of common conditions, 48% in communication skills, 19% in skills associated with evidence-based medicine, 54% in professionalism, and 37% in basic skills required for a physical examination. There were substantial differences among the medical schools in the perceived preparedness of their graduates. Significant positive correlations were found between preparedness for all clinical areas and a better educational environment (all $p<0.01$), but there were no significant associations between the pass rate on the NMLE and preparedness for any clinical area, as well as pass rate and educational environment (all $p>0.05$).

Conclusion: Different educational environments among universities may be partly responsible for the differences in self-perceived preparedness of medical students for postgraduate clinical training. This study also highlights the poor correlation between preparedness for practice and the NMLE.

Key Words: Undergraduate medical education; Model Core Curriculum; Educational environment; Postgraduate clinical training; Medical Licensure Examination

Background

One of the principal roles of medical schools is to equip newly graduating physicians for postgraduate clinical training.[1] Lack of preparedness for this training has been linked to greater stress in junior physicians and may also lead to poorer quality of patient care.[2] To improve clinical skills that can increase readiness for postgraduate clinical training, undergraduate medical education in Japan has recently begun implementing the Model Core Curriculum. This emphasizes clinical practice through use of a problem-based learning (PBL), organ-based curriculum (rather than a department-based approach) and implementation of the objective structured clinical examination (OSCE).[3]

In a recent study, preparedness for postgraduate clinical training was found to differ substantially among 23 medical schools in the UK.[1] Crucial factors influencing these differences may include a good educational environment for medical students, curricular changes with greater attention to preparedness for practice, adherence to modern educational theory, integration of basic and clinical sciences, and appropriate selection of students who will be successful medical graduates.[4] However, the extent to which newly graduating physicians in Japan are prepared for postgraduate clinical training and differences among medical schools in terms of preparedness have not been evaluated.

Preparedness depends on engagement of medical students. This is affected by their motivation and learning style, as well as the educational environment, which has an important effect on student learning[5] and is one of the most important factors determining the success of a curriculum.[6] The educational environment is now considered to be the most significant manifestation and conceptualization of a curriculum, since it embraces everything that happens in a medical school.[7] Thus, it is important to investigate whether a better environment is likely to help graduating physicians to be better prepared for postgraduate clinical training.

In the current study, we first sought the views of newly graduating physicians on their preparedness for postgraduate clinical training to obtain an understanding of this preparedness at different medical schools. Next, we evaluated the relationship between the educational environment and preparedness at all 80 medical schools in Japan. We also evaluated the relationship between the pass rate on the National Medical Licensure Examination (NMLE) and preparedness for postgraduate clinical training. These pass rates are likely to reflect a

greater emphasis on the traditional curriculum (which is aimed at equipping students to pass this exam) and less emphasis on the new Model Core Curriculum.[8] Failure to find an association between the pass rate and preparedness might suggest a need to consider a national policy change regarding the contents of the NMLE or even whether to continue with this exam as a requirement for medical licensure.

METHODS

Subjects

In November 2008, a cross-sectional survey was mailed to 6725 1st-year resident physicians at 427 teaching hospitals with five or more 1st-year resident physicians, including 80 university hospitals and 347 non-university teaching hospitals throughout Japan. The program director at each hospital was asked to encourage the residents to complete the self-administered questionnaire. The academic calendar in Japan starts on April 1 and ends on March 31 of the following year; thus, the survey was conducted at the midpoint (November) of the 2008 academic year. We obtained ethical approval for the study from the ethics committee of St. Luke's International Hospital in Tokyo, Japan.

Survey Contents

Data collected in the survey included the demographics of the respondents and their responses to the Dundee Ready Education Environment Measure (DREEM) inventory, which were used to assess the learning environment of the medical schools from which the respondents had graduated.[6] The original version of the DREEM is in the public domain and was translated forward and backward by native English speakers and native Japanese speakers for development of a version for use in this study. The DREEM inventory consists of 50 items, each of which is scored from 1 to 4 on a Likert scale, giving a maximum score of 200.[6] A score of 100 or lower indicates a poor environment for learning medicine. The five DREEM domains include students' perception of learning, perception of teachers, academic self-perceptions, perception of atmosphere, and social self-perceptions. The DREEM has been validated as a measure of learning environment effectiveness in several previous studies.[5, 9]

The survey also included six questions related to preparedness for clinical competencies taken from the Association of American Medical Colleges Graduation Questionnaire (AAMC-GQ) after forward and backward translation into Japanese, for which we received permission from the AAMC. This questionnaire has been validated in several studies.[10-12] The questions represented a broad range of competencies for the following six clinical areas: 1) general clinical skills, 2) basic knowledge of diagnosis and management of common conditions, 3) communication skills, 4) skills for applying evidence-based medicine to clinical care, 5) professionalism, and 6) basic skills for physical examination. Participants rated their confidence in each of these areas using a five-point Likert scale: 1 (strongly agree), 2 (agree), 3 (neither agree nor disagree), 4 (disagree), and 5 (strongly disagree).

Data Analysis

Participant responses were grouped by university that they graduated from. Spearman correlation coefficients and linear regression were used for analysis of relationships between the mean DREEM score for each medical school and the proportion of respondents from that school with confidence in their preparedness for each of the six clinical skills (as indicated by an answer of "strongly agree" or "agree"). Similar analyses were performed for the relationships between the pass rates on the 2008 NMLE (data were obtained from the Ministry of Health, Welfare and Labor) and the proportion of respondents with confidence in their preparedness. Statistical analyses were conducted using SPSS 15.0J (Tokyo, Japan), with a two-tailed value of $p<0.05$ considered to be statistically significant.

RESULTS

A questionnaire was sent to 6725 1st-year residents in 427 teaching hospitals in November 2008. A total of 2429 PGY-1 physicians-in-training (927 women, 38%) completed the questionnaire (response rate, 36%). Among the 80 medical schools from which the participants in the survey had graduated, the mean DREEM scores ranged from 95 to 137 (pooled mean 112; median 111; standard deviation 7.2). Three medical schools (Teikyo, Osaka Medical, and Self-defense Medical) had a mean DREEM score of less than 100, while Jichi

Medical University had the highest mean DREEM score (Table 1).

Of the 2429 respondents to the survey, 406 (17%) agreed or strongly agreed that they were confident that they had acquired the general clinical skills required to begin postgraduate training. Overall, confidence in preparedness for postgraduate training in other clinical areas was indicated by 686 respondents (29%) for basic knowledge of diagnosis and management of common conditions, 1173 (48%) for communication skills, 465 (19%) for skills for applying evidence-based medicine to clinical care, 1317 (54%) for professionalism, and 904 (37%) for basic skills for physical examination.

Based on data for each school, the proportions of participants in the survey who were confident in their preparedness for postgraduate training ranged from 0% (Wakayama Prefecture Medical) to 43% (Jichi Medical) for general clinical skills; from 3% (Showa) to 56% (Juntendo) for basic knowledge of diagnosis and management of common conditions; from 19% (Kyoto Prefecture Medical) to 77% (Asahikawa Medical) for communication skills; from 3% (Showa) to 42% (Tokyo) for skills for applying evidence-based medicine to clinical care; from 27% (Kyoto Prefecture Medical) to 83% (Tokyo Women's Medical) for professionalism; and from 9% (Nippon) to 70% (Jichi Medical) for basic skills for physical examination (Table 1).

A Spearman correlation analysis of the relationships between mean DREEM scores for medical schools and the proportions of participants with confidence in preparedness indicated significant relationships (all $p<0.01$) in all six clinical areas, with positive coefficients of 0.425 for general clinical skills ($R^2=0.218$), 0.377 for basic knowledge of diagnosis and management of common conditions ($R^2=0.160$), 0.452 for communication skills ($R^2=0.169$), 0.402 for skills for applying evidence-based medicine to clinical care ($R^2=0.236$), 0.522 for professionalism, $R^2=0.294$), and 0.568 for basic skills for physical examination ($R^2=0.393$).

The pass rates for the 2008 NMLE ranged from 85% (Teikyo) to 99% (Hirosaki). A Spearman correlation analysis of the relationships between these pass rates and the proportion of participants with confidence in their preparedness indicated no significant relationship in any of the six clinical areas, with coefficients of 0.035 for general clinical skills ($p=0.758$), 0.039 for basic knowledge of diagnosis and management of common conditions ($p=0.733$), 0.123 for communication skills ($p=0.277$), -0.077 for skills for applying evidence-based medicine to clinical care ($p=0.496$), 0.078 for professionalism ($p=0.492$), and -0.012 for basic skills for physical

examination (p=0.917). The mean DREEM scores and pass rates for the universities also showed no significant relationship (Spearman correlation coefficient=0.209, p=0.063).

Discussion

The current study showed that only 17% of newly graduating physicians from all medical schools in Japan felt prepared by their schools in general clinical skills for their first postgraduate clinical training. Preparedness for other clinical areas was similarly unsatisfactory. These results are in line with those of our recent pilot report indicating that Japanese medical graduates perceive that they are not well prepared clinically to start working as physicians-in-training, and that self-reported preparedness is significantly lower in Japanese graduates than in their US counterparts.[13]

The Model Core Curriculum has been introduced in undergraduate medical education throughout Japan, but there are still considerable differences in the duration and contents of clinical clerkships among medical schools.[14] In many schools, students have limited opportunities to examine and interact with patients and little direct responsibility for patient care.[15] In this study, we found substantial differences among Japanese medical schools in self-perceived preparedness of their graduates, with significant positive correlations between preparedness for all clinical areas and a better educational environment. These findings suggest that differences in educational environments among medical schools may be partly responsible for the differences in preparedness of graduates for postgraduate clinical training. The implications of this finding and the need for improvement of the educational environment for medical students should be of concern to medical educators.

Engagement is a crucial step in learning that depends not only on the motivation and learning style of students, but also on the environment or "climate" in which the learning is taking place.[16, 17] Genn and Harden suggested that the educational environment is the soul and spirit of the medical curriculum and that establishing an effective environment is the most important single task of medical educators.[7, 18] Components of the educational environment related to the curriculum include the style (e.g., PBL vs. a traditional approach) and quality of teaching, signposting and clarity of the process, outcomes, assessment, and support mechanisms for students. Components of the educational environment related to individual teachers include teaching style,

enthusiasm, physical environment, and role modeling.[16] Thus, our finding of significant positive correlations between preparedness for all clinical areas and a better educational environment in medical schools reflects the importance of this environment in affecting the extent of engagement of medical students. Further research is needed to determine the components in an educational environment that are most strongly related to preparedness.

We found no significant association between the pass rate on the NMLE and preparedness for any of the six clinical areas addressed in our survey. Before introduction of the Model Core Curriculum into most medical schools in Japan, students were required to attend lectures that were aimed at equipping the students to pass the NMLE (a paper-only test with a major emphasis on cognitive domains), even in the last two years of clinical training in a six-year medical school program. Some schools still emphasize this traditional curriculum, with little emphasis on the new Model Core Curriculum.[8] A change of the contents and assessment method of the NMLE, such as introduction of clinical skills assessment or an OSCE-type test, may be appropriate for improving preparedness by helping schools to focus their training on this aspect. Another possibility is to administer the cognitive domain tests of the exam prior to entry into the clinical clerkship period in the last two years of medical school, similar to the United States Medical Licensing Exam (USMLE) Step 1.

There are several limitations in this study. First, our results might have been influenced by sampling bias, since the response rate was relatively low and many residents may have been too busy to respond to the survey. However, our sample size was large and we were able to examine a nationwide sample. Second, our survey only investigated each resident's perception of their preparedness, rather than using clinical or objective assessment of preparedness. Thus, we cannot determine the differences in outcomes between universities objectively. Finally, because of the cross-sectional observational nature of the survey, we are unable to determine a causal link between the educational environment and preparedness, since confounding factors such as personal characteristics of students that may be related to both environment and preparedness may have influenced the results.

In summary, our results show that Japanese medical graduates perceive that they are not well prepared clinically to start working as physicians-in-training., with substantial differences among Japanese universities in

the perceived preparedness of their graduates. Significant positive correlations were found between preparedness for all clinical areas and a better educational environment, but there was no significant association between the pass rate on the National Medical Licensure Examination and preparedness for any clinical areas. The link between self-perceived and independently observed preparedness needs to be established. Then, further research will be required to evaluate the most important components in the educational environment that influence preparedness. Japanese medical schools may need to consider establishment of minimum requirements for clinical competencies for their medical graduates.

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Table 1: DREEM score and confidence in preparedness for postgraduate training in six clinical areas in 80 medical schools
(DREEM=Dandee Ready Educational Environment Measure, EBM=evidence-based medicine, PE=physical examination)

Rank by DREEM	Medical school	DREEM Score (mean)	Proportion of those confident in preparedness					
			General	Basic knowledge	Communication	EBM	Ethics	PE
1	Jichi Medical	137	0.433	0.433	0.733	0.333	0.800	0.700
2	Tokyo Women's Medical	134	0.250	0.396	0.667	0.271	0.833	0.604
3	Tokyo Jikeikai Medical	125	0.273	0.394	0.636	0.242	0.667	0.576
4	Saitama Medical	125	0.074	0.259	0.444	0.185	0.481	0.333
5	Juntendo	124	0.167	0.556	0.500	0.389	0.667	0.500
6	Tokyo	124	0.167	0.500	0.417	0.417	0.750	0.667
7	Kagawa	124	0.111	0.407	0.407	0.333	0.667	0.407
8	Kawasaki Medical	123	0.381	0.286	0.571	0.190	0.571	0.429
9	Saga	121	0.156	0.156	0.556	0.378	0.556	0.533
10	Hirosaki	121	0.387	0.387	0.677	0.097	0.645	0.484
11	St. Marianna	120	0.321	0.321	0.571	0.393	0.679	0.571
12	Tokyo Medical Dental	120	0.333	0.222	0.444	0.333	0.444	0.667
13	Toyama	119	0.333	0.367	0.667	0.333	0.633	0.433
14	Niigata	119	0.111	0.333	0.444	0.333	0.630	0.444
15	Dokkyo	119	0.138	0.241	0.586	0.103	0.655	0.414
16	Wakayama Prefectural Medical	118	0.000	0.267	0.400	0.133	0.733	0.400
17	Fukui	118	0.174	0.217	0.478	0.174	0.652	0.391
18	Asahikawa Medical	117	0.400	0.500	0.767	0.233	0.700	0.600
19	Oita	116	0.147	0.324	0.471	0.206	0.471	0.324
20	Kobe	116	0.026	0.289	0.263	0.132	0.421	0.211
21	Kyushu	116	0.286	0.310	0.643	0.214	0.524	0.452
22	Keio	115	0.368	0.263	0.526	0.105	0.421	0.421
23	Tsukuba	115	0.333	0.333	0.472	0.278	0.444	0.444
24	Yamagata	114	0.087	0.130	0.435	0.087	0.609	0.348
25	Kinki	114	0.200	0.250	0.500	0.100	0.750	0.250
26	Tokushima	114	0.238	0.333	0.714	0.190	0.667	0.667
27	Kochi	114	0.100	0.267	0.567	0.200	0.533	0.300
28	Osaka City	114	0.250	0.500	0.625	0.375	0.625	0.375
29	Miyazaki	114	0.178	0.356	0.644	0.178	0.622	0.356
30	Kumamoto	113	0.158	0.158	0.474	0.105	0.421	0.421
31	Kanazawa	113	0.088	0.176	0.382	0.088	0.500	0.206
32	Fukushima Prefectural Medical	113	0.206	0.294	0.382	0.176	0.559	0.382
33	Chiba	113	0.105	0.263	0.526	0.237	0.605	0.342
34	Yokohama City	113	0.167	0.500	0.500	0.333	0.500	0.333
35	Nagoya	113	0.156	0.267	0.533	0.333	0.644	0.378
36	Nagoya City	112	0.103	0.310	0.448	0.138	0.552	0.552
37	Sangyou Medical	112	0.087	0.304	0.565	0.217	0.565	0.261
38	Tottori	112	0.133	0.200	0.533	0.167	0.633	0.467
39	Kitazato	112	0.143	0.200	0.543	0.114	0.543	0.314
40	Nagasaki	111	0.212	0.242	0.394	0.091	0.455	0.333
41	Kurume	111	0.161	0.304	0.554	0.214	0.429	0.339
42	Akita	111	0.170	0.321	0.453	0.208	0.623	0.396
43	Tokyo Medical	111	0.381	0.452	0.667	0.262	0.762	0.476
44	Aichi Medical	111	0.135	0.243	0.324	0.135	0.459	0.216
45	Kyoto Prefectural Medical	111	0.077	0.154	0.192	0.115	0.269	0.192
46	Kanazawa	110	0.240	0.360	0.600	0.240	0.520	0.480
47	Sapporo Medical	110	0.139	0.278	0.500	0.167	0.611	0.306
48	Nara Prefectural Medical	110	0.100	0.500	0.700	0.100	0.700	0.400
49	Nippon	110	0.045	0.182	0.455	0.091	0.545	0.091
50	Yamaguchi	110	0.167	0.167	0.500	0.167	0.444	0.389
51	Iwate Medical	110	0.200	0.400	0.480	0.280	0.480	0.400
52	Ryukyu	110	0.163	0.116	0.488	0.070	0.395	0.349
53	Toho	110	0.222	0.333	0.444	0.167	0.500	0.556
54	Fukuoka	109	0.059	0.137	0.314	0.078	0.373	0.196
55	Hyogo Medical	109	0.125	0.333	0.292	0.208	0.500	0.417
56	Shinshu	109	0.088	0.235	0.382	0.206	0.529	0.324
57	Nippon Medical	109	0.091	0.318	0.455	0.182	0.500	0.227
58	Hokkaido	109	0.139	0.278	0.389	0.194	0.556	0.250
59	Hiroshima	109	0.026	0.308	0.359	0.179	0.513	0.385
60	Tohoku	109	0.143	0.464	0.429	0.214	0.429	0.357
61	Fujita Health Hygiene	109	0.192	0.231	0.346	0.154	0.423	0.346
62	Shimane	108	0.094	0.344	0.375	0.156	0.531	0.313
63	Shiga	108	0.105	0.211	0.316	0.211	0.632	0.211
64	Hamamatsu	108	0.089	0.133	0.244	0.089	0.356	0.222
65	Osaka	108	0.235	0.412	0.353	0.176	0.471	0.412
66	Mie	108	0.114	0.295	0.318	0.159	0.364	0.250
67	Ehime	107	0.143	0.171	0.400	0.114	0.486	0.229
68	Showa	107	0.091	0.030	0.606	0.030	0.485	0.364
69	Gifu	107	0.188	0.219	0.438	0.188	0.438	0.250
70	Kagoshima	106	0.093	0.233	0.488	0.140	0.512	0.256
71	Tokai	106	0.100	0.267	0.467	0.167	0.500	0.367
72	Okayama	106	0.229	0.286	0.343	0.171	0.429	0.429
73	kyoto	105	0.071	0.179	0.321	0.107	0.357	0.250
74	Gunma	104	0.054	0.243	0.378	0.135	0.432	0.378
75	Kansai Medical	104	0.160	0.200	0.480	0.160	0.560	0.360
76	Kyorin	102	0.103	0.179	0.256	0.051	0.308	0.231
77	Yamanashi	102	0.043	0.087	0.435	0.217	0.478	0.261
78	Self-defense Medical	99	0.143	0.214	0.571	0.179	0.643	0.250
79	Osaka Medical	95	0.077	0.231	0.462	0.077	0.538	0.154
80	Teikyo	95	0.091	0.318	0.455	0.227	0.455	0.273

3. 日本における大学病院と市中教育病院の教育環境

Title: Educational environment of university and non-university hospitals in Japan

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Running head: Educational environment in hospitals in Japan

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