

Do We Have Enough Obstetricians?— A survey by the Japan Medical Association in 15 countries

JMAJ 52(3): 150–157, 2009

Narumi EGUCHI*¹

Abstract

Purpose The purpose of this questionnaire survey was to examine the supply of obstetricians and the policies and measures adopted by various countries to secure obstetricians. Based on the survey results, we discuss measures appropriate for the situation in Japan.

Methods The targets were the 17 member medical associations in the WMA. Questionnaires were sent by E-mail and answers were obtained from 14 associations (Canada, Denmark, Finland, France, Germany, Iceland, Israel, Korea, New Zealand, Singapore, Taiwan, Thailand, U.K. and U.S.). We added JMA's answers to the survey results. The survey was conducted between January and August 2008.

Results (summary) The difficulty in securing a sufficient supply of obstetricians is an international challenge, despite the differences in healthcare systems among countries. We found Japan and other countries share a remarkably similar situation characterized by the increase in the percentage of female obstetricians, the increase in the number of legal disputes, and the changes in physicians' attitude toward work. While every country is taking multiple measures to cope with the problem, many expect a shortage and disparity of obstetricians for the future.

Some countries have a system that allocates residents/interns by regions and medical specialties. However, because the final decision of work location is made by the free will of physicians, a shortage of physicians in local areas occurs even with such quotas. A good work environment and the popularity of obstetrics contribute to a stable supply of obstetricians in some countries, but obstetricians in Japan were found to be working the longest hours among the surveyed countries. Improvement of the work environment seems to be one of the requirements for solving the problem.

Key words Shortage and disparity of obstetricians, Supply and demand of physicians, International survey, Measures to secure physicians

Introduction

The shortage and disparity of obstetricians has become an issue of grave public concern in Japan. This problem most typically manifests in the incidences where an emergency patient with an obstetrical condition in a large city is refused admission after repeated attempts to find available hospital care, not infrequently resulting in the death of the patient. While the government is taking steps to alleviate this problem, the

Japan Medical Association (JMA) conducted a survey to find out whether other World Medical Association (WMA) member countries are experiencing similar problems and what measures are being taken to ensure a stable supply of obstetricians. The following outlines the results of this unique study.

Survey Results

Age, gender, working hours of obstetricians

The percentage of female obstetricians was in the

*1 Chief Researcher, Japan Medical Association Research Institute, Tokyo, Japan (eguchi@jmari.med.or.jp).
This is a revised English version of a paper originally published in the JMARI Working Paper No.185, March 2009.

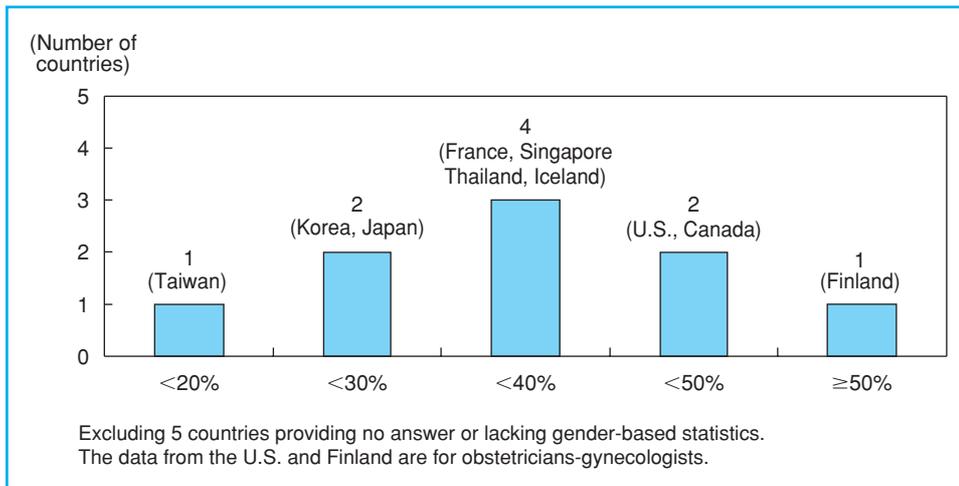


Fig. 1 Percentage of female obstetricians, n = 10

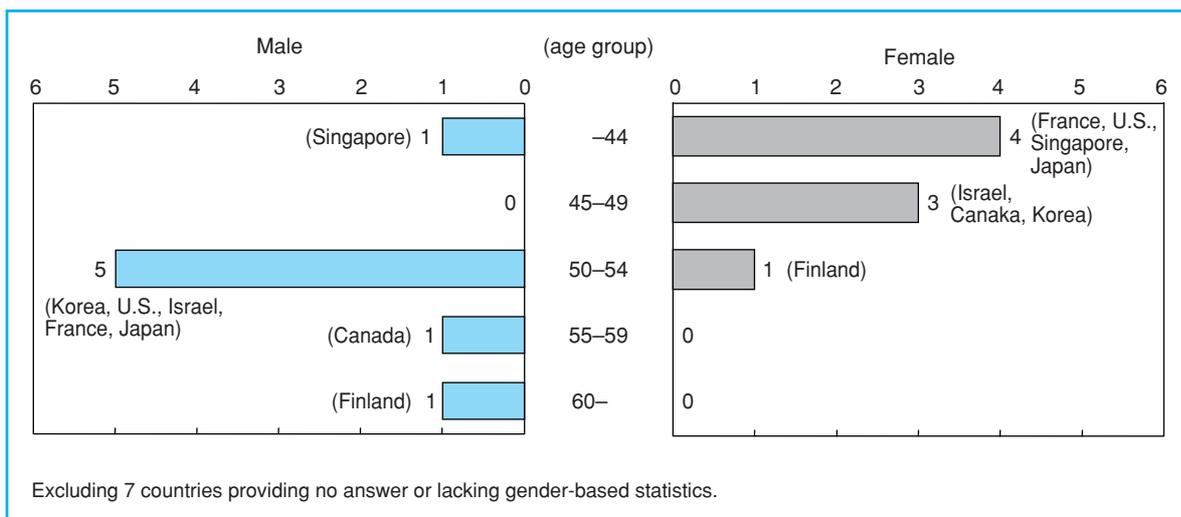


Fig. 2 Mean age of obstetricians, by gender, n = 8

range from 30% to 40% in 4 of the 10 respondent countries. As compared with Asian countries (23.0% in Japan), Western countries tended to have a higher percentage of female physicians (Fig. 1). In most countries, the mean age of obstetricians was 50–54 among males and mid-40s among females. The age of obstetricians in Japan shared the same pattern as that in the U.S. and France both for males and females (Fig. 2).

The working hours of obstetricians was 30–39 hours in 1 country, 40–49 hours in 3 countries, 50–59 hours in 3 countries, and 70–79 hours in 2 countries among 12 respondent countries (Fig. 3). Japan reported the longest working time of 74 hours.

tries, and 70–79 hours in 2 countries among 12 respondent countries (Fig. 3). Japan reported the longest working time of 74 hours.

The number of deliveries per obstetrician, as calculated simply as the total number of deliveries divided by the total number of obstetricians, was higher in the U.K. (468.1), Canada (268.4), and France (231.1), followed by Germany (143.1), the U.S. (140.9), and Japan (137.9) (Table 1). However, this simple comparison may not be necessarily important, because obstetricians are involved in childbirth in different manners and

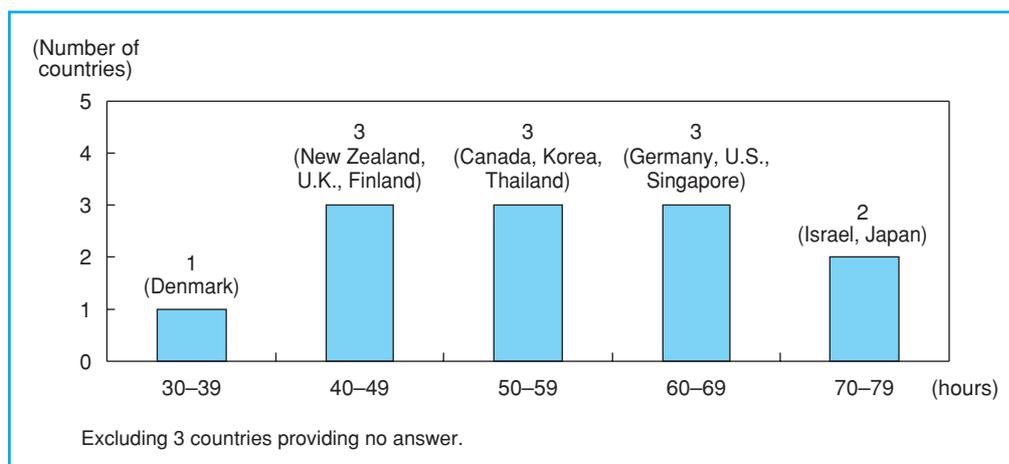


Fig. 3 Working hours of obstetricians (average weekly), n = 12

Table 1 Total number of births, total number of physicians, total number of midwives, etc. in eleven countries

Country	① Births	② Obstetricians ^a	Physicians per 1,000 population	Percentage of obstetricians in all physicians	Births per obstetrician (①/②)	Midwives ^b	Average weekly working hours of obstetricians	Popularity of ob-gyn field ^c	Work environment ^d	Present shortage and disparity of obstetricians ^e
U.S.	4,174,000	29,633	2.4	3.2%	140.9	4,470	65	2	3	R
Japan	1,101,000	7,985	2.1	3.0%	137.9	25,775	74	2	1	T/R
France	797,000	3,449	3.4	1.3%	231.1	15,596	—	1	1	R
U.K.	749,000	1,600	2.5	1.1%	468.1	31,186	44	4	5	T
Germany	673,000	4,702	3.5	1.7%	143.1	18,000	60	2	4	None
Korea	452,000	4,711	1.7	5.1%	95.9	9,121	54	1	1	R
Canada	340,000	1,267	2.1	1.8%	268.4	509	53	3	3	T/R
Denmark	65,000	515	3.3	2.1%	126.2	2,262	37	3	—	None
New Zealand	59,000	234	2.3	2.4%	252.1	34,660	47	2	2	T/R
Finland	59,000	612	2.7	2.7%	96.4	4,000	48	3	4	R
Singapore	32,361	269	1.6	3.9%	120.3	224	60	4	4	None

^a: Calculated as the total number of obstetricians-gynecologists $\times 0.7$ for the U.S. and Finland. The data for Japan is the number of full-time employed physicians in the obstetrics departments where delivery is performed (Source: "The Survey for the National Perinatal Care Database" (Japan Society of Obstetrics and Gynecology)). ^b: There are variations in the definition of midwives, e.g., as there are 310,000 nurse-midwives in the U.S. ^c: Four-point evaluation from "very popular" (4 points) to "very unpopular" (1 point). ^d: Five-point evaluation from "very good" (5 points) to "very poor" (1 point). ^e: T/R: shortage in total number and regional disparity; T: shortage in total number; R: regional disparity.

other medical professionals such as midwives participate to different extents in different countries. Hospital midwives are particularly active in France, the U.K., and Germany.

It should be noted that obstetricians in Japan were found to be working the longest hours among the surveyed countries, despite the non-exceptional results for the number of births per

obstetrician, the total number of midwives, and other indices, as compared with those in other countries. Underlying this situation may be the differences in the work system of physicians such as the attending physician system, the involvement of other medical workers such as midwives and nurses, and what pregnant women expect from physicians.

Table 2 Answers regarding shortage and disparity of obstetricians, 15 countries

	Now	Future
There is no shortage or disparity of obstetricians	Germany, Denmark, Singapore, Iceland (4 countries)	Singapore, Denmark (2 countries)
There is shortage or disparity of obstetricians	11 countries	10 countries
Shortage in total number + regional disparity	Canada, New Zealand, Israel, Japan (4 countries)	France, U.K., Germany, Canada, New Zealand, Taiwan, Thailand, Israel, Finland, Japan (10 countries)
Shortage in total number	U.K., Thailand, Taiwan (3 countries)	0
Regional disparity	U.S., France, Finland, Korea (4 countries)	0
There is an excess in obstetricians	0	Iceland (1 country)

Two countries (U.S. and Korea) gave no answer regarding the future.

Supply and demand of obstetricians

To the question “How do you evaluate the current supply and demand of obstetricians?”, 11 of 15 countries answered that there is the problem of total or regional shortage or disparity (Table 2). The shortage in total number was reported from 7 countries: Canada, Israel, New Zealand, Thailand, Taiwan, the U.K., and Japan. Of these, 4 countries (Canada, Israel, New Zealand, and Japan) reported the presence of regional shortage or disparity in addition to the shortage in total number. Four countries including Korea, Finland, France and the U.S. answered that there is no shortage in total number but there is regional shortage (disparity). Only 4 countries (Denmark, Germany, Iceland, and Singapore) reported that there is no shortage or disparity. For the future, 10 countries expect shortage or disparity, 2 answered that there will be no shortage or disparity, 1 expects an excess, and 2 provided no answer.

Of the countries reporting that there is no shortage or disparity at the present, Germany is considered to be benefiting from the high per-capita number of physicians.*² This country has guidelines for regional allocation of primary care physicians based on the demand plan developed by the government. However, the answer from Germany expects shortage and disparity in the near future, and the government has stated the need for measures against shortage. Denmark

did not report a lack of concern regarding shortage and disparity both at the present and for the future. This country also has a large per-capita number of physicians and the average working hours of obstetricians is 37 hours, which is half the hours in Japan. Obstetrics is a popular choice among medical students, and the attractiveness of this discipline seems to be contributing to the stable supply of obstetricians in Denmark.

On the other hand, the countries reporting shortage or disparity of obstetricians mentioned that the problem was due to the following factors. In France, the main causes are the shortage of students who choose obstetrics as their specialty and the aging of working obstetricians. Factors identified in the U.S. are the shortage of workforce associated with the increase in the number of female physicians, the trend of early retirement of obstetricians reflecting the increase in the number of legal disputes, and the increase in the number of obstetricians-gynecologists who do not want to perform deliveries. In addition, there is a general tendency among physicians to avoid long working hours. In Canada, the absolute shortage in the number of physicians relative to the vast land area, the increase in the number of female physicians, and the changes in the attitude toward work among young physicians are noted. In Korea, the percentage of obstetricians-gynecologists choosing obstetrics has fallen to one-fourth due to the low medical fees for obstetricians and the high risk of legal disputes, as well

*² According to the OECD Health Data (2008), the number of physicians (clinicians) per 1,000 population is 3.5 in Germany, 3.3 in Denmark, and 2.1 in Japan.

Table 3 Measures taken in various countries (12 countries)

Measures	Number of countries	Countries
Controlling and restricting the number of residents/interns	7	Canada (province), Finland (hospital), U.K. (nationwide), Korea (hospital), Thailand (nationwide, hospital), U.S., France
Financial supports to secure physicians in local and remote areas (scholarships, subsidies)	6	Canada, Finland, Germany, Korea, Thailand, Japan
Controlling and restricting the total number of obstetricians in the country	5	Finland, Denmark, Singapore, France, U.S.
Employment of foreign physicians (excluding movements in EU)	4	U.K., Denmark, France, U.S.
Programs encouraging medical students and residents/interns to work in local and underpopulated areas	3	Canada, Germany, Denmark
Educational programs to help medical students in choosing work locations	2	Canada, Taiwan
Educational programs to help medical students in choosing specialties	2	Korea, Japan (pilot program)
Career planning programs to assure future professional career of physicians in local and remote areas	1	Germany
Other: exemption from military service	1	Korea

No answers from New Zealand, Israel, and Iceland.

as the shortage of other medical professionals supporting in delivery. The answer from Taiwan referred to the decrease in the number of physicians choosing obstetrics due to the cost of insurance against legal disputes and demanding work environment. Finland reported a decrease in the number of hospital-employed physicians reflecting the physicians' inclination to private practice.

Policies and measures for securing obstetricians

With respect to the policies and measures for securing obstetricians, "the control of the quotas for residents/interns" is practiced in 7 countries, "subsidies and other financial support to physicians in local and underpopulated" areas are implemented in 6 countries, and "nationwide quotas for the number of obstetricians" are specified in 5 countries (Table 3).^{*3} In Canada, physicians are encouraged to work in local and underpopulated areas through financial assistance and training

programs. The employment of foreign physicians is adopted in 4 countries. For the EU countries, since a medical license in an EU country is equally valid among the member countries, physicians are free to move to other EU countries. The use of foreign physicians is rare in Asia, though. It is supposed that the problems of language and historical background are preventing the use of foreign physicians in Asian countries.

Regional quotas for residents/interns France

In France, in addition to the admission quota for medical schools, quotas are defined for the purpose of allocating residents/interns to regions and medical departments based on the national examination ranking (Table 4). The total number of posts in 2009 was 5,704, and an addition to this number has been made recently. These posts are allocated based on the choice of students and the result of medical examination.^{*4} The number

^{*3} The question listed 10 items including "other" (multiple answers).

^{*4} According to the French survey "Specialty Selection after 2006 National Examination" (Etudes et Resultants No.571) by Directorate for Research, Studies, Assessment and Statistics (DREES), the Ministry of Health, specialties chosen by female interns were internal medicine, pediatrics, general practitioner, surgery, anesthesiology, obstetrics-gynecology, psychiatry, pathology, gynecology, public health, and industrial health in decreasing order. Those chosen by male interns were internal medicine, surgery, anesthesiology, general practitioner, pediatrics, pathology, obstetrics-gynecology, psychiatry, gynecology, public health, and industrial health in decreasing order.

Table 4 Quotas for interns at medical schools in France, 2009 (summary)

	Ile-de-France	Northeastern	Northwestern	Rhône-Alpes	Western	Southern	Southwestern	Antilles-Guiana	Total
Internal medicine specialists	144	156	163	94	165	76	82	5	885
Surgical specialists	91	93	100	57	91	57	54	7	550
General practitioners	372	615	605	415	620	190	308	75	3,200
Obstetrics	30	24	26	17	26	14	16	2	155
Gynecology	4	2	3	2	2	2	5	0	20
Pediatrics	36	38	37	22	28	19	16	4	200
Anesthesiology	35	46	48	36	38	26	28	3	260
Psychiatry	36	53	56	28	54	23	29	1	280
Industrial health	9	8	14	7	7	4	5	0	54
Pathology	6	7	7	4	7	3	5	1	40
Public health	12	11	8	6	10	3	9	1	60
Total	775	1,053	1,067	688	1,048	417	557	99	5,704

(Journal Official De La Republique Francaise 2008)

of posts in obstetrics was 155 in total after an increase by 5 in 2007. After the end of the training period, the government is not entitled to the allocation or placement to geographical regions or medical specialties, because the freedom to chose the practice location is established as a right.

Each province has a regional medical education committee comprising the agencies of the Ministry of Health and the Ministry of Education, the deans of university medical schools, and representatives from medical associations and other organizations. The numbers of specialist physicians are determined at the central level, considering the proposals from local authorities based on demand data.^{*5} The measures planned to secure physicians in local areas for the future include the detailed career guidance during medical education and the development of a 5-year plan for the number of posts by region and by medical specialty.

The U.S.

There are 125 medical schools in the U.S. producing approximately 17,000 graduates every year. The number of medical students is planned to be increased by 15% during several years in the future to meet the increase in the national population. The Residency Review Committee (RRC), a national organization, determines the number of residents entering the postgraduate clinical training programs. This committee consists of representatives from several specialist-accrediting organizations (the American Board), the American College of Obstetricians and Gynecologists (ACOG), the American Medical Association, etc., as well as a resident physician. There are 245 specialist training programs operated at various sites in the U.S. with the total capacity of accepting 1,150 students. Half of these programs are operated at university hospitals, and the other half are at community hospitals.

*5 The calculation formula for GP has been disclosed. Theoretical number of GPs in a region = number of GPs for the entire French population \times total population of the region. A = number of GPs in the region – theoretical number of GPs. Appropriate number = $(A \times 3,500) / \text{number of GP in France}$. (The 3,500 mentioned above is the approximate planned quota for GP interns in 2011). The calculation regarding specialist physicians requires future discussion. (Les Internes en Medecine, Le rapport 2006–2007, ONDPS).

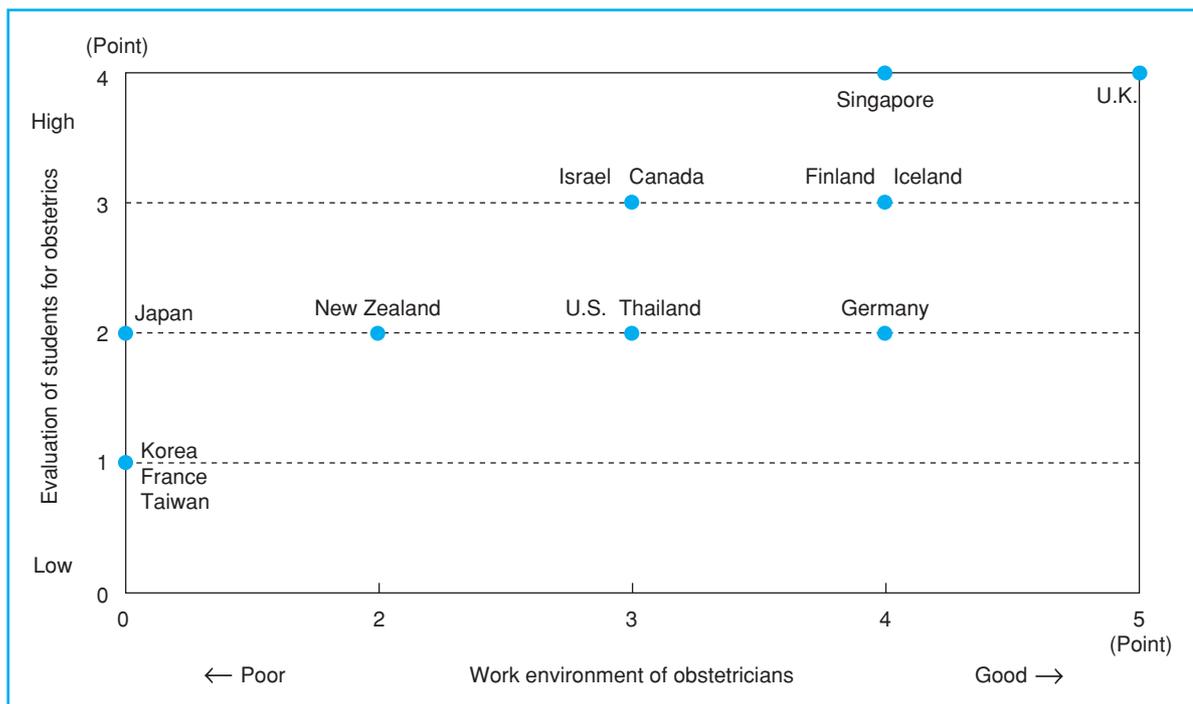


Fig. 4 Work environment of obstetricians and evaluation of students (n = 14)

The RRC is held 3 times a year, and each program is reviewed at intervals of 2–5 years.

The cost for clinical training is funded by several entities. The federal government directly allocates and distributes subsidies to individual posts. It also provides indirect assistance to hospitals holding training programs. State governments and hospitals themselves also share some of the costs. Because the federal government sets a ceiling on subsidies, financial restrictions effectively limit the number of training programs and the quotas for residents. In this way, the number of physicians is not determined by the central government in the U.S., but the number of residents is determined by the RRC and the training programs at various hospitals. However, this system only defines the number of residents. Similarly to France, the final selection of work location is left to the freedom of individuals. This situation is partly responsible for the shortage of obstetricians in the states with a high risk of legal disputes and underpopulated areas.

Midwives

The involvement of midwives in delivery reflects

the culture, the healthcare systems, and the service providing systems of each country. Generally speaking, a country with a higher number of deliveries per physician is expected to have more midwives, and the involvement of midwives would be more important there. There are wide variations in the number of midwives in various countries. It is the largest in New Zealand, where there are 34,660 midwives for 64,040 births. Because of a shortage of obstetricians, a majority of deliveries are performed by midwives. In France, there are as many as approximately 16,000 midwives, as compared with approximately 3,400 obstetricians, taking charge of normal births in hospitals. Similarly, midwives in Germany are handling normal deliveries in hospitals under the supervision of physicians.

Centralization of delivery facilities

An overwhelming majority of deliveries take place at hospitals. Of the 10 countries that answered regarding the type of medical institutions providing delivery services, the percentage of deliveries at hospitals was 98% or more in 7 countries and 95% in 1 country. The remaining 2 countries are

Korea and Japan, where delivery at clinics is common. There were 220,000 deliveries at hospitals and 210,000 deliveries at clinics in Korea, while there were 570,000 deliveries at hospitals and 540,000 deliveries at clinics in Japan. These 2 countries resemble each other in that similar ratios of deliveries are taking place at hospitals and at clinics.

Of the 8 countries that answered regarding the centralization of delivery facilities, 6 acknowledged the centralization into larger facilities. While centralization to larger delivery facilities is developing also in Korea, this has led to the manifest problem of the long travel time for pregnant women to reach childbirth facilities, 2–4 hours in local areas and 30–60 minutes in urban areas.

Legal disputes and work environment

An increase in the number of legal dispute was reported from 11 countries, while the number of legal disputes was not increasing in 3 countries and 1 country answered that the number was unknown. Regarding the influence of increasing legal disputes on the decision of residents/interns in choosing obstetrics, 8 of the 11 countries reporting increases in the number of legal disputes answered that the increase was affecting the choices made by residents/interns.

The popularity of obstetrics as a medical department among medical students was fifty-fifty, as it was popular in 7 and unpopular in 8 of 15 responding countries. A correlation was found between the attractiveness to students and the work environment of obstetricians (correlation coefficient=0.840) (Fig. 4). In the U.K. and Singapore, where obstetrics is very popular, the work environment was “excellent” and “good,” respectively. In contrast, answers from France, Korea, and Taiwan indicated that the work environment of obstetricians was “extremely poor.”

Summary and Discussion

The results of the survey in 15 countries highlighted that the difficulty in securing a sufficient supply of obstetricians is an international challenge, and none of the surveyed countries have a decisively effective solution to the shortage of

obstetricians. While every country is taking multiple measures to cope with this problem, many expect a shortage and disparity of obstetricians for the future. Western countries are supplementing the shortage of obstetricians by employing foreign physicians as needed, which may work out in comparatively timely ways. There is not such supplementation in Japan, though, posing a much greater challenge.

In some countries, the number of physicians in each region is determined by a committee consisting of specialist academic societies, medical educational organizations, and other relevant bodies. The corresponding local committees in Japan should be enhanced with multi-organizational members, building on the basis of the current system. It may become possible in the future to change the disparity of physicians by specifying the approximate number of residents/interns by region and by medical specialty through the reworking of the intern training system. To ensure that physicians would stay after the training programs, a comprehensive set of solutions including the career planning for local physicians, improvement of the work environment, and financial incentives are needed.

The obstetricians in Japan were found to be working the longest hours among the surveyed countries. Details should be investigated to determine the cause of the situation, but improvement of the work environment is an obvious requirement for solving the current problems.

Acknowledgements

We express our thanks to the medical associations of the 14 countries and people who cooperated in this survey.

Research cooperators

Fourteen Medical Associations (Members of the World Medical Association)

Ralph W Hale, MD: Executive Vice President, ACOG (U.S.)

Naoko Okuda: Expatriate Researcher in France, JMARI

Yoshiko Miura: Expatriate Researcher in France, JMARI

Paul Talcott: Expatriate Researcher in Germany, JMARI

Mayumi Deguchi: Researcher, JMARI