

REVIEW

Evaluation of primary care practice in the University of Tokushima

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Abstract : The shortage of medical doctors is now a serious social problem in Japan. There are 2.1 physicians per 1000 residents in Japan, fewer than most other OECD countries. Tokushima Prefecture has the second highest population of medical doctors in Japan, but the shortage of medical doctors in rural areas was observed by an uneven distribution. Primary care practice was started in the education of clinical clerkship for 5th grade medical students of our university since July, 2008. They round a variety of hospitals, clinics and facilities for nursing-care during one week in Kaihu county where has a severe problem in the shortage of medical doctors in Tokushima Prefecture. In order to research the efficacy of the primary care practice, we have administered a questionnaire for medical students before and after the lecture and practice, and the intensity was estimated in each student by using visual analogue scale. The results showed that the practice was more meaningful in increasing the intensity for interest and passion for community medicine and medicine in remote area than the lecture. Our data indicate that it is important to prepare more courses to learn primary care and general medicine in our clinical practice system to continue the interest and passion in community medicine. *J. Med. Invest.* 56 : 81-87, August, 2009

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AN AGING SOCIETY

We are in a severe aging society in Japan now. Estimated populations in Japan are shown in Figure 1. The population of aged people is estimated to be increasing, and people aged 75 or over will occupy approximately 20% in 2030. Percentages of people who need a nursing care are increased by aging,

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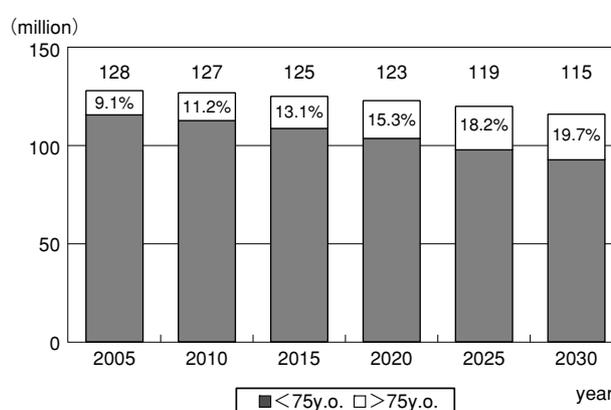


Figure 1 Estimated population in Japan

and approximately 50% of people aged 80 or over need a nursing care (Table 1). Since aged people

Table 1. Percentage of aged people who need a nursing care

Age (y.o.)	Percentage
80~84	26.8
85~	50.7

have various complicated diseases, they need generalists who can care a variety of diseases. Organization for Economic Co-operation and Development (OECD) Health data 2008 (1) showed that total health spending accounted for 8.2% of Gross Domestic Product (GDP) in Japan in 2005, which is 0.7% lower than the OECD average, 8.9% (Figure 2). Thus, there are several complicated medical problems in the future of Japan.

A SHORTAGE AND AN UNEVEN DISTRIBUTION OF MEDICAL DOCTORS

The shortage of medical doctors is now a serious social problem in Japan. Japan has fewer physicians per residents than most other OECD countries (Figure 3). Japan had 2.1 physicians per 1000 residents in 2005, below the OECD average of 3.1. The Ministry of Health and Labor has increased the number of medical students into the university since 2009 because it recognized an absolute shortage of total number of medical doctors in Japan. An uneven distribution has been known to be a serious problem because more doctors work in urban areas of all prefectures of Japan than in rural areas. The number of doctors per residents varies among 47 prefectures in Japan. Tokushima Prefecture has the second highest population of medical doctors in Japan (Table 2).

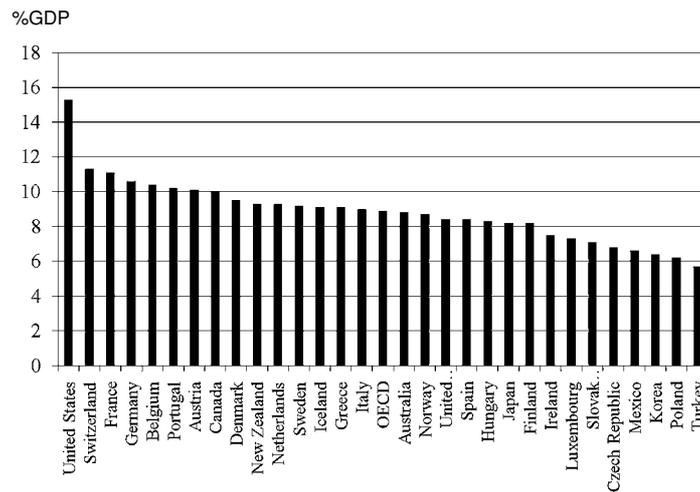


Figure 2 Health expenditure as a share of Gross Domestic Product (GDP) Organization

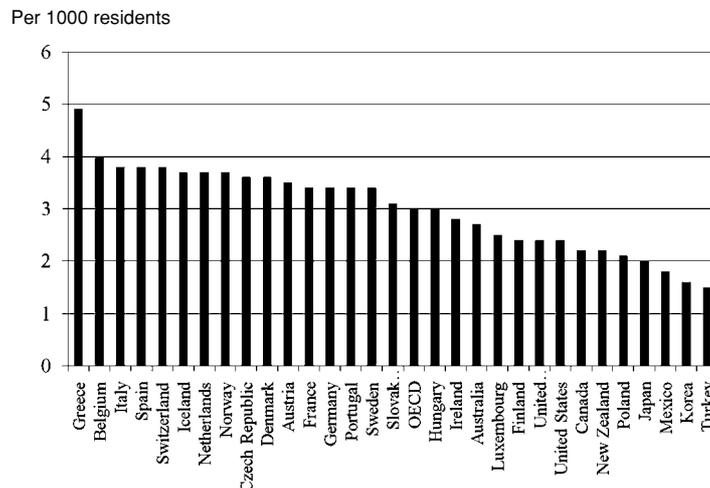


Figure 3 Practicing physicians per 1000 residents in OECD countries in 2005

Table 2. The Number of doctors per residents

	Prefecture	Residents	Doctors	Doctors/100,000 residents
1	Tokyo	12378000	32698	264
2	Tokushima	813000	2133	262
3	Kochi	803000	2099	261
4	Kyoto	2638000	6815	258
5	Tottori	609000	1573	258
6	Fukuoka	5058000	12807	253
7	Nagasaki	1495000	3696	247
8	Okayama	1952000	4807	246
9	Ishikawa	1179000	2816	239
10	Shimane	749000	1783	238
	Total	127687000	256668	201

The population of Tokushima Prefecture is approximately 800,000, and most of them (68.7%) live in the east area, especially in Tokushima City (33.3%), the capital city. Therefore, though the number of doctors per residents varies among 8 cities and 16 towns in Tokushima Prefecture, it is more in east area of Tokushima Prefecture than in other areas. Especially, Tokushima city has the highest population in Tokushima Prefecture, 440 doctors per 100,000 residents.

PROBLEMS IN PREFECTURAL KAIHU HOSPITAL

A shortage of medical doctors is more serious in the south and west areas of Tokushima Prefecture. For example, 18 medical doctors including 9 physicians worked at Tokushima Prefectural Kaihu Hospital, which is placed in the south of Tokushima Prefecture, in Jun, 2004, but the number of them has decreased to 7 doctors which included only 2 physicians in Mar, 2009. Department of Community and

Primary Care Medicine was established in the University of Tokushima Graduate School entrusted by Tokushima Prefecture on Oct, 2007. Missions of the Department are to research to relieve a break-down of community medicine in Tokushima Prefecture and to start the education system to experience the community medicine for medical students in the University of Tokushima Faculty of Medicine. At the same time, Community Medicine Research Center was established in Prefectural Kaihu Hospital as a research center of Department of Community and Primary Care Medicine. The Department has the following research projects to improve the environment of community medicine and to train generalists. 1) Research for development of education program about community medicine using clinical practice, 2) Research for development for education program to train generalists, 3) Research for the effective cooperation system among hospitals in local community, and 4) Research for the cooperation system to use medical resources effectively in community medicine.

Table 3. The number of doctors in Kaihu Hospital

	Jun 2004	Apr 2006	Mar 2009
Physicians	9	2	2
Surgeons	3	3	2
Orthopedists	2	2	3
Brain surgeons	1	1	Part time
Gynecologists	2	1	Part time
Pediatricians	1	Part time	
Urologists	Part time		

PRIMARY CARE PRACTICE

Community-based medical education provides medical students with opportunities to interact with people from a wide range of social and cultural backgrounds which are difficult to learn in large hospital (2-4). Before taking students into a community, there are several things that we should prepare. One of the most important points is to choose communities and facilities that provide appropriate learning environments for the students depending on the objectives of the activities. After the selection of communities, we contacted the local community leader and the community team, and performed the community orientation which is important to inform them the purpose of student’s visit. Before the practice, students also should know what to do in the community. Basic informations about the community such as environments, health service information and development of the community could be useful for the students to study there. Students should be aware that community members including nurses, public health nurses and care managers can be important teachers and active partners in the community activities.

Primary care practice was started in the education of clinical clerkship for 5th grade medical students in our university since Jul in 2008. They round a variety of hospitals, clinics and facilities in Kaihu county during one week, and learn the importance of primary care and patient care in the community medicine. A visiting home care and health education for residents, which is difficult to learn in the practice in the university, are included in the schedule (5, 6). Facilities which they round and the schedule are shown in Figure 4. After the orientation in the

university in which students practice about medical interview in community medicine and learn what they do in the community, they visit Kaihu county and stay for 4 days. Students present their schedule and impressions of the community medicine to staffs and residents, and discuss with them about various medical problems and concerns in the community including Kaihu county on the final day.

A QUESTIONNAIRE

We have administered a questionnaire for medical students before and after the lecture and practice, and the intensity was estimated in each student by using visual analogue scale (VAS). VAS is a simple method to obtain a self rating. It is a horizontal 100 mm VAS, with endpoints of 100 (strongest state) at the right and 0 (weakest state) at the left. Table 4

Table 4. Questionnaire entries

Q1) Are you interested in community medicine?
Q2) Are you interested in medicine in the remote area?
Q3) Do you prove worthwhile to community medicine?
Q4) Do you prove worthwhile to medicine in the remote area?
Q5) Do you understand community medicine?
Q6) Do you understand medicine in the remote area?
Q7) Do you want to work in medicine in the remote area?
Q8) Do you want to become a generalist in the future?
Q9) Do you want to become a specialist in the future?

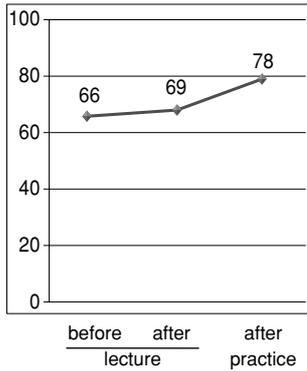
shows a list of questionnaire entries which consists of 10 questions. A slight increase was observed by the lecture in the intensity for interest in community medicine and medicine in remote area (+3 and +8, respectively) (Figure 5). On the other hand, the

Mon	Tue	Wed	Thu	Fri
In the University	In Kaihu county			
Orientation Medical interview Communication skill Presentation skill Physical exam skill	Public Hospitals Kaihu Hospital Yuki Hospital Kainan Hospital Public Clinics Shishikui Clinic Tebajima Clinic Long-term care facilities Geriatric health service facilities Day care/Day service Care house Group home Home-visit care Health care			Presentation

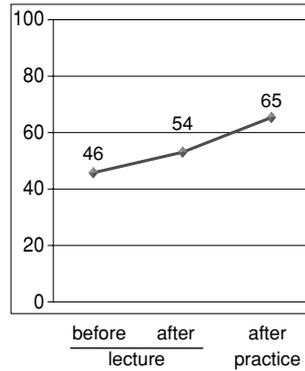
Figure 4 Time schedule of the community practice in Kaihu county

A) Interest

Q1) Community medicine

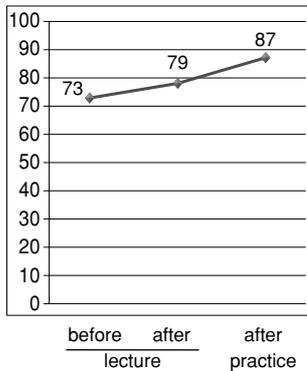


Q2) Medicine in remote area

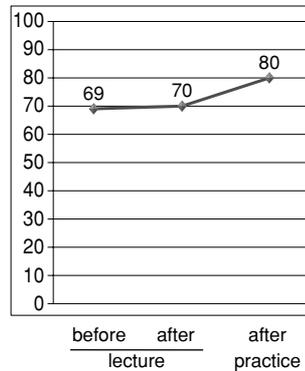


B) Worthwhile

Q3) Community medicine

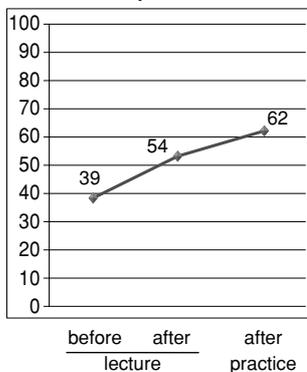


Q4) Medicine in remote area

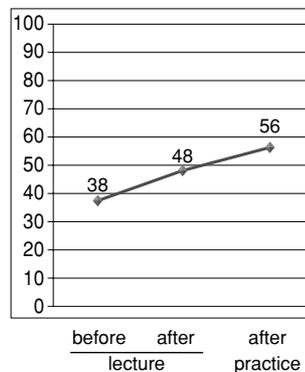


C) Understanding

Q5) Community medicine

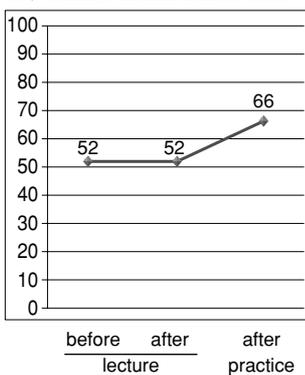


Q6) Medicine in remote area



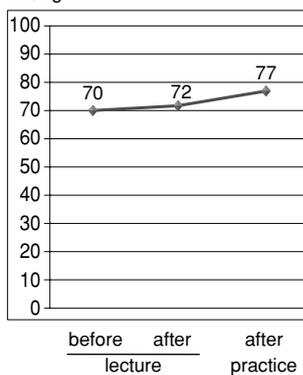
D) Passion

Q7) a will to work in remote area



E) Future design

Q8) generalist



Q9) specialist

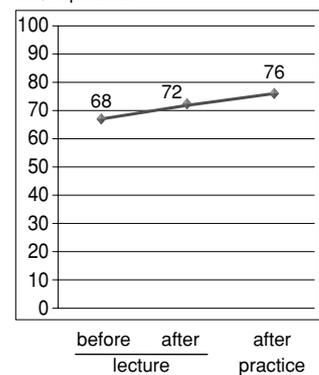


Figure 5 A questionnaire shown in Table 4 was administered for medical students before and after the lecture and the practice, and the intensity was estimated in each student by using visual analogue scale (VAS). The values are the means of 56 students.

practice increased the interest in both community medicine and medicine in remote area (+9 and +11, respectively) more than the lecture. The intensity for worthwhile in community medicine was similarly increased by the lecture and the practice (+6 and +8, respectively). On the other hand, the lecture did not affect the intensity for worthwhile in medicine in remote area (+1) but the practice greatly increased it (+10). In the intensity for understanding, the lecture increased the level of both community medicine and medicine in remote area (+15 and +10, respectively) as well as the practice (+8 and +8, respectively). The intensity for passion to work in remote area was greatly increased by the practice but not by the lecture (+14 and 0, respectively). Both the lecture and practice slightly increased the intensity of a will to become a generalist. The intensity of a will to become specialist was also increased by the lecture and practice which may result from the effect of educations except general medicine. These data indicated that the practice is more meaningful in increasing the intensity for interest and passion for community medicine and medicine in remote area than the lecture. Therefore, the repeated practice from the early grade may be important to continue the intensity. One of aims of our laboratory is to increase the number of medical students who are going to work in community medicine in the future. It is important to prepare courses to learn general medicine in our clinical practice system to continue the interest in community medicine. However, to determine the role of the practice and lecture on education for community medicine, we need to evaluate an achievement level by using other objective assessments such as written examination. Furthermore, it is important to research whether the practice results in increasing the actual number of doctors who work in the community medicine of Tokushima Prefecture.

Periods of primary care practice vary among universities in Japan depending on the difference in education program of the universities. Primary care practice was performed in 5th or 6th grade medical students in approximately 80% of medical universities, and periods of the practice in 43% of the universities are within 7 days. These data show that systems of primary care practice in our university seems to be a nationwide scale and to be a standard. Although longer periods may result in more enhancement of the practice, there are some problems to be cleared to prolong periods of the practice such as the number of staffs and other education program

in the university.

Educations to community medicine for early grade medical students as an early exposure are important. In our university, the social medicine practice has been performed since several decades ago mainly for 3rd grade medical students at various kinds of welfare institution and nursing facilities. As an early exposure before medical students decide the future course, it may be important for them to give a chance to experience the community medicine developing the social medicine practice in our university.

COMMUNITY MEDICINE RESEARCH CLUB IN TOKUSHIMA UNIVERSITY

Community medicine research club was formed by medical students in the University of Tokushima who have an interest in the community medicine on Oct 1, 2007. It included 13 members at the starting time, and has 42 members on Mar, 2009. They have visited various medical facilities to learn medicine and welfare, health care, nursing care, and team work with co-medicals. The activities of this club may have the following two meanings. First, this club gives medical students a chance to learn the importance of primary care and general practices in community medicine since the early grade though the lecture and practice about community medicine were performed for medical students for 3rd grade and over, 5th grade and over, respectively. Second, this club consisted of medical students from 1st grade to 6th grade. Medical education in the curriculum is usually performed for each grade. The members have a chance to communicate with those of other school years in the club.

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