

National survey of international electives for global health in undergraduate medical education in Japan, 2011–2014

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ABSTRACT

Interest in global health in medical education is increasing in Western countries, whereas data from non-Western countries is scarce. Here, we conducted a nationwide study of international clinical electives at Japanese medical schools from 2011 to 2013. We constructed a 28-item cross-sectional survey in Japanese to investigate the rate and characteristics of both Japanese students going abroad and international students coming on exchange to Japan. The surveys were sent to the administrative offices of all 80 Japanese medical schools in each of the three years, through the Japan Medical Education Foundation. All 80 medical schools responded to the questionnaire (response rate, 100%). An average of 70 of the 80 medical universities provided exchange programs across the three years to allow students to travel abroad as part of the school curriculum and obtain academic credit. The schools provided support in the form of in- and outside-class preparatory programs, tuition fee exemptions and housing. The most popular destinations for Japanese students going abroad were Europe and North America, which may reflect the desire of Japanese students to acquire medical knowledge or experience through exposure to the English language. In contrast, the most common countries of origin of international exchange students coming to Japan were Asian countries such as South Korea, Thailand and Taiwan, with pediatrics being the most popular elective. Foreign exchange programs are becoming increasingly incorporated into the Japanese medical education curriculum and can help to strengthen international partnerships and collaborations.

Keywords: international electives, Japan

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INTRODUCTION

Evidence from the English literature indicates a steep increase in interest in global health in medical education in recent years. Much research has been conducted into international clinical electives and training programs for undergraduate medical students and medical interns in postgraduate training in developed Western countries¹. These reports indicate that the number of medical students in the United States partaking in international clinical elective rotations has increased five-fold during the past 30 years²⁻⁴. Such progressive globalization in medical education mirrors the increasing political and economic globalization in wider society and is leading to an increase in the number of young medical students and interns taking part in international exchanges.

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Data showing increased interest in medical education and associated trends are largely derived from Western countries. Research papers from non-Western countries published between 2006 and 2014 accounted for a mere 8.7% of all papers published in the three major journals dedicated to medical and healthcare professions and education: *Academic Medicine*, *Medical Education* and *Medical Teacher*⁵. There are also very few research reports from non-Western countries regarding medical students and interns partaking in international exchanges and international clinical electives⁶. Therefore, the apparent increased interest in global health in medical education, reflected by an increased number of medical students and interns participating in international exchanges, may be biased towards trends in Western countries.

We previously reported on the status of international clinical electives in Japan. Our cross-sectional study examined international elective participation rate in 65 of 80 universities throughout the country within a single academic year between April 2009 and March 2010 (fiscal year 2009 in Japan)⁷. We showed that only 3% of all students participated in foreign clinical electives. Moreover, there have been almost no subsequent reports in English about international clinical electives in Japan.

We therefore conducted a second nationwide study of international clinical electives at Japanese medical schools over a three-year period from 2011 to 2013. The objective of this study was to present the current status of international clinical electives in medical education in one of the world's few non-Western developed countries. The study involved a nationwide survey with 100% recovery rate conducted in collaboration with the Japan Medical Education Foundation. While the state of globalization in undergraduate medical education within Japan presented in this study does not extend beyond the framework of international clinical electives, we do provide an accurate reflection of the current status in Japan.

MATERIALS AND METHODS

The University of Tokyo Faculty of Medicine's Institutional Research Ethics Committee approved the study. We conducted a cross-sectional national survey of academic affairs officers at all 80 Japanese medical schools in 2011, 2012, and 2013. We constructed a 28-item survey in Japanese based on the survey we used in our previous study to investigate the rate and characteristics of both Japanese students going abroad as well as international students coming on exchange to Japan⁷. For Japanese students going abroad, the survey enquired about the a) number of participants, b) destination countries, c) duration of stay, d) extent of faculty supervision, e) pre-departure programs, f) types of programs (e.g., mutual exchange between sister schools), g) number of academic credits granted for participation, h) criteria for student assessment, i) scholarship, j) vaccinations, and k) liability insurance. For international students coming to Japan, the survey enquired about the a) home countries, b) year of exchange, c) duration of stay, d) discipline studied, e) selection criteria, f) scholarship, g) accommodation, and h) language support.

In June 2012, 2013, and 2014, we sent the survey by mail to administrative offices of all 80 medical schools in Japan through the Japan Medical Education Foundation (JMEF). JMEF was founded in 1979 by the Ministry of Education, Culture, Sports and Science. Its mission is to improve medical education in Japan, and its activities include, but are not limited to, holding annual medical education seminars for Deans, conducting annual site visits to one of Japan's medical schools, and offering grants for medical education research. All 80 medical schools agreed to participate and responded to the questionnaire (response rate, 100%). They were free to complete the survey by email or postal mail. Data were collected between June and August in 2012, 2013, and 2014, and are presented as counts, means, and medians.

RESULTS

Response rate

We sent reminders to 80 universities across Japan and received responses from all institutions for each of the three years between 2011–2013 (response rate, 100%).

Number of exchange students

Of the 80 universities across Japan, 69, 71 and 71 universities sent exchange students abroad in 2011, 2012 and 2013, respectively. The total number of exchange students by academic year was 726 students in 2011, 790 students in 2012 and 749 students in 2013, and the number of students by grade is shown in Figure 1.

Number of exchange students by university

According to the number of exchange students sent abroad, University A ranked first in all three years, with 69, 47 and 63 students in 2011, 2012 and 2013, respectively. University B ranked second in 2011 with 40 students, fourth in 2012 with 30 students, and third in 2013 with 37 students sent abroad. Therefore, the universities that had strong exchange programs were consistently strong across the three years.

Country of destination and number of students

In 2011, 298, 56, 55, 52, 33 and 33 students went on exchange to the United States, Britain, Germany, Thailand, the Philippines and South Korea, respectively. In 2012, 333, 62, 52, 48, 47 and 24 students went to the United States, Britain, Germany, South Korea, Thailand and Canada, respectively. There was no accurate data by country for 2013. Trends in the number of students studying in North America, Asia and Europe are shown in Figure 2.

Mode of choosing the exchange destination

Students' destination for exchange was determined by inter-university partnership, connections between teachers, connections between individuals, and through private organizations. The proportion of students whose destination was chosen according to these modes is shown in Figure 3.

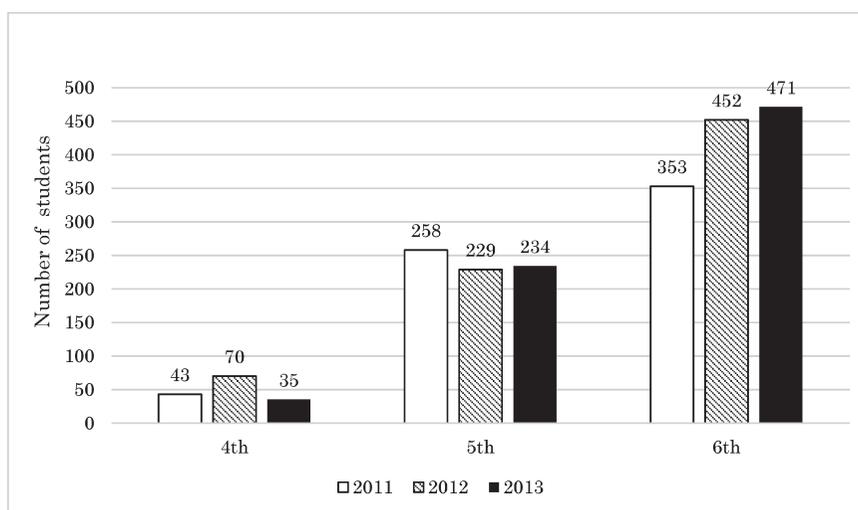


Fig. 1 Number of exchange students by grade

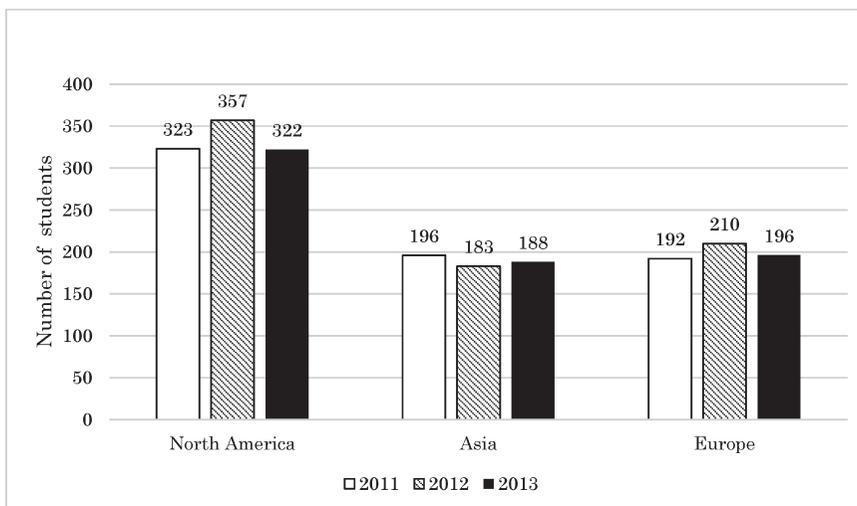


Fig. 2 Number of exchange students by region

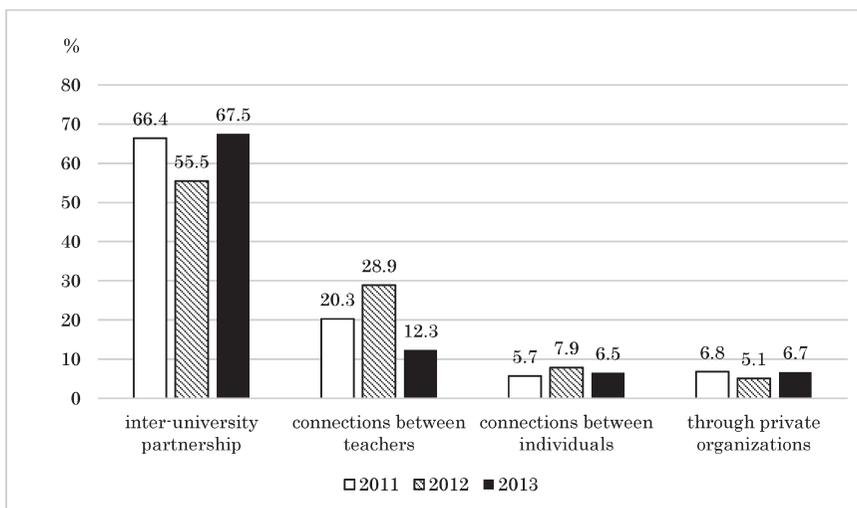


Fig. 3 Mode of choosing the exchange destination

Timing of travel

The proportion of students who attended exchanges abroad during the official academic semester(s) (as opposed to during a long vacation period) were 68.0%, 70.8% and 73.8% of students in 2011, 2012 and 2013, respectively.

Approval for academic credit

The number of cases that were approved for academic credit accounted for 70.7%, 75.1% and 78.7% of all exchanges in 2011, 2012 and 2013, respectively.

International electives in Japan

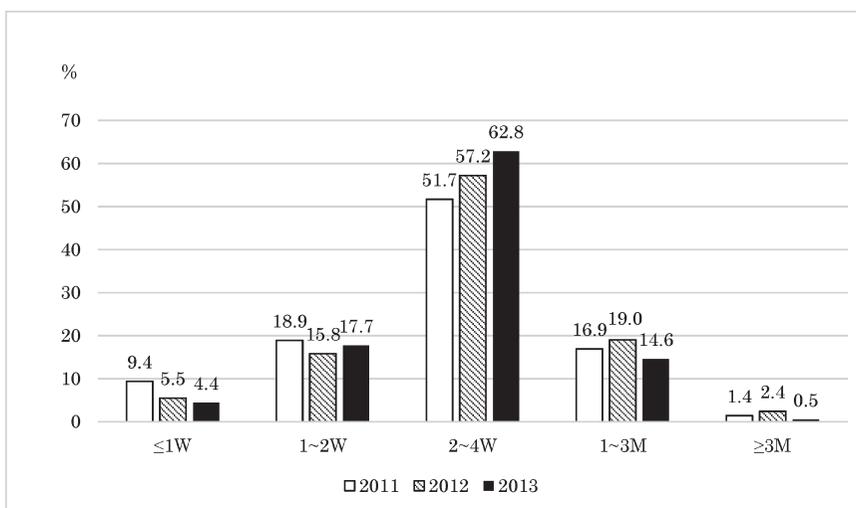


Fig. 4 Duration of exchange

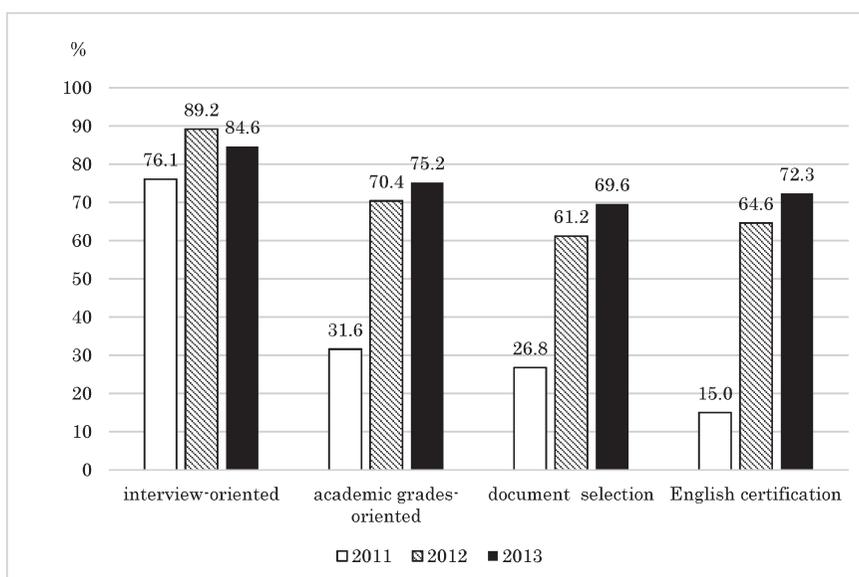


Fig. 5 Methods of internal selection for exchange

Duration of exchange

The proportion of students and their period of exchange are shown in Figure 4. More than half of exchange students in any year went abroad for periods of 2 weeks to 4 weeks.

Methods of internal selection for exchange

The number of universities that preferred to use an internal selection process for candidates of exchange programs increased gradually from 55 (73.6%) universities with exchange programs in 2011 to 56 (77.6%) in 2012 and 61 (80.1%) in 2013. The proportion of universities that used

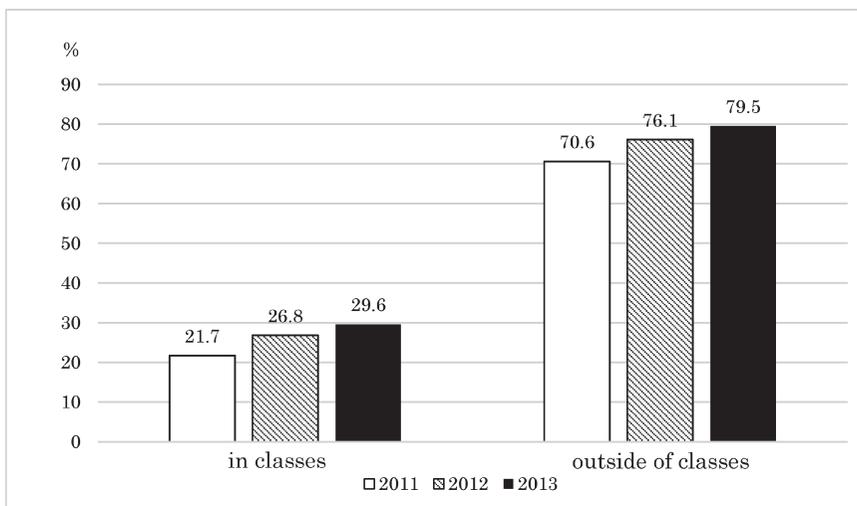


Fig. 6 Preparatory education

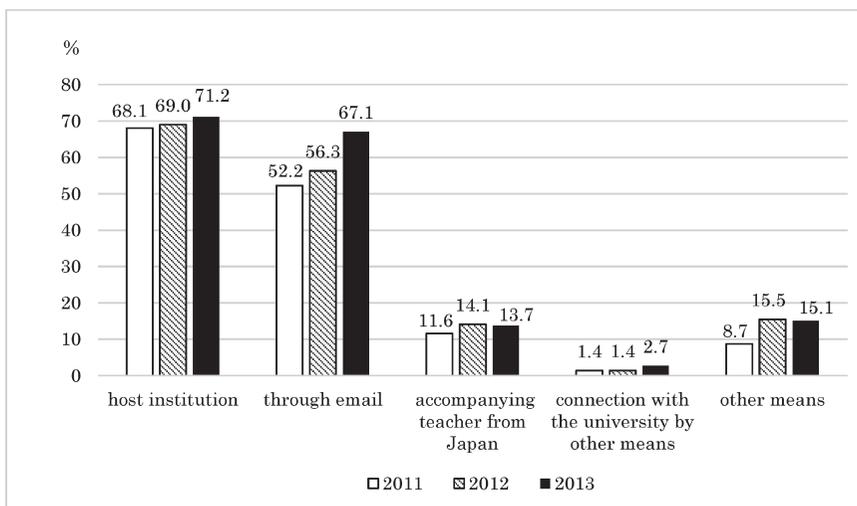


Fig. 7 Support during students' time abroad

methods for selection, including interview-oriented, academic grades-oriented, document selection, and English certification (more than one answer was allowed) are shown in Figure 5.

Preparatory education in and outside of classes

The proportion of schools that provided preparatory education in- and outside classes is shown in Figure 6. Opportunities for education increased across the three years. Preparatory education was conducted in classes by less than 30% of schools, and outside classes in over 70% schools in any year.

Support during students' time abroad

Modes of support provided to students during their study abroad are shown in Figure 7.

International electives in Japan

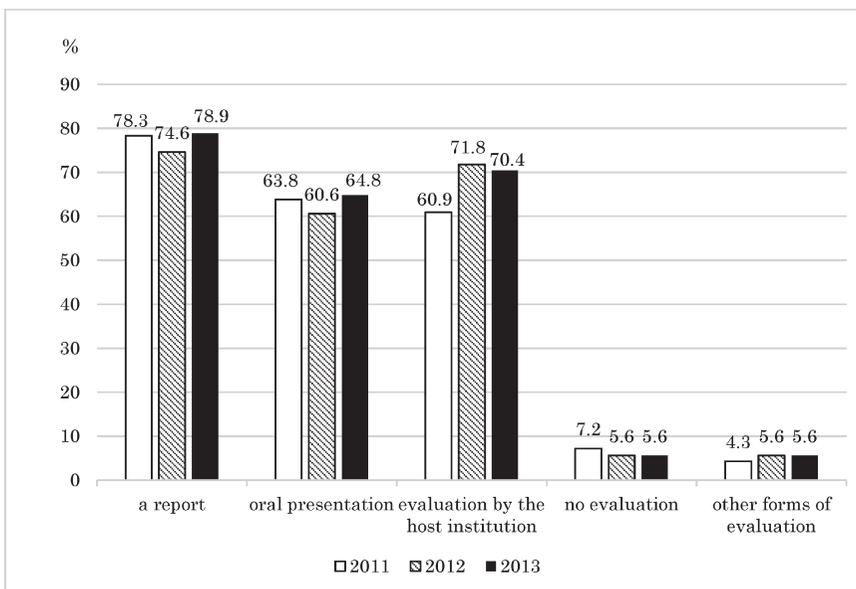


Fig. 8 Methods of student evaluation

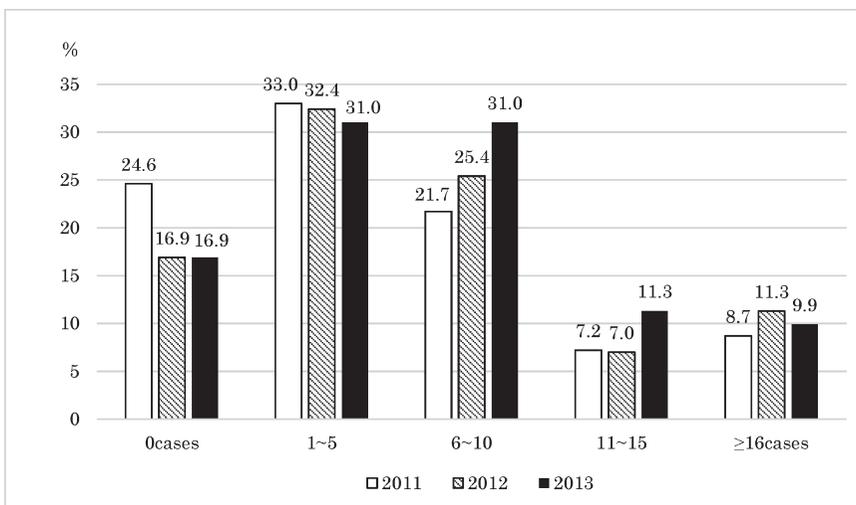


Fig. 9 Financial support provided by the university

Methods of student evaluation

The proportion of schools and the methods used for student evaluation, including submission of a report, oral presentation at a reporting session upon the student's return, evaluation by the host institution, no evaluation, and other forms of evaluation (more than one answer was allowed) are shown in Figure 8.

Financial support provided by the university

The proportion of cases that received financial support is shown in Figure 9.

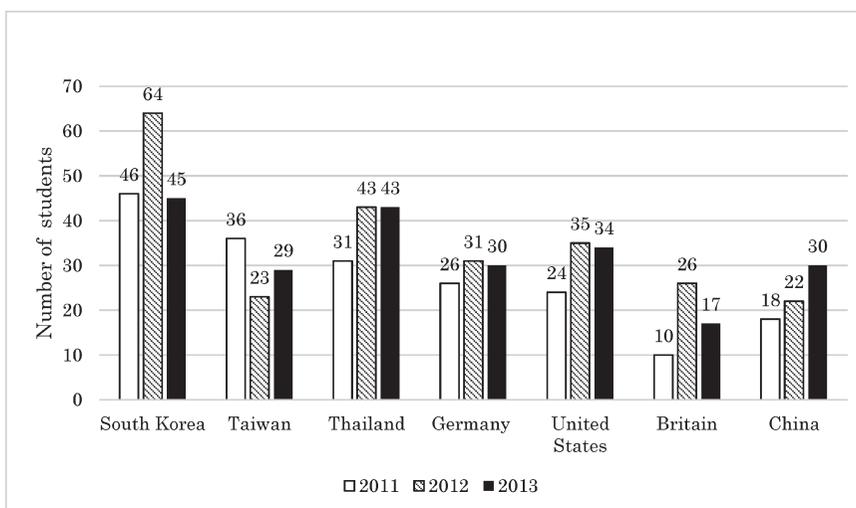


Fig. 10 Number of exchange students from abroad by country

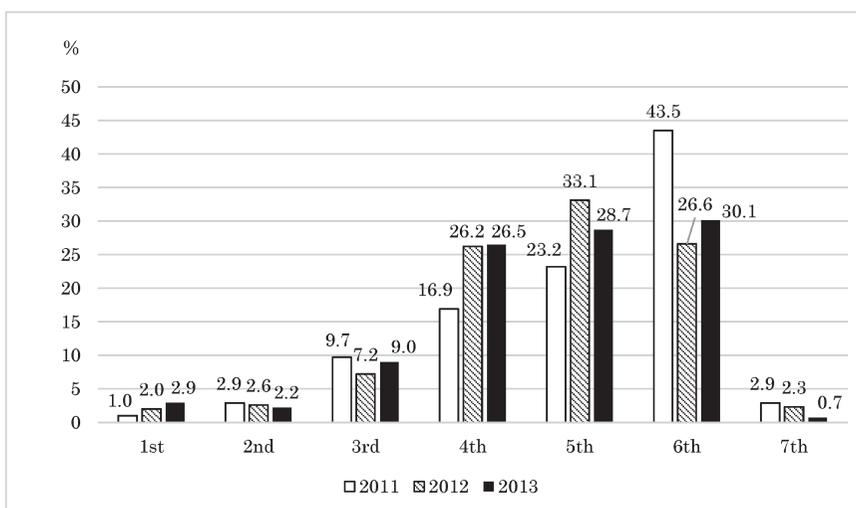


Fig. 11 Academic year of exchange students from abroad

Number of exchange students from abroad

Of the 80 universities, 56 (70.0%), 57 (72.3%) and 61 (76.3%) received a total of 263, 345 and 349 students from abroad in 2011, 2012 and 2013, respectively.

Countries of origin of exchange students from abroad

The number of international students and their countries of origin are shown in Figure 10.

Academic year of exchange students from abroad

The proportion of exchange students from each academic year is shown in Figure 11.

Duration of stay of exchange students from abroad

The duration of exchange was 3–4 weeks for 57.9% of students in 2011 and 4 weeks for 45.2% of students in 2013. Data on duration of stay was not available for 2012.

Clinical departments receiving exchange students from abroad

The top five Japanese medical departments hosting exchange students in 2011 were pediatrics, surgery, internal medicine, obstetrics and gynecology, and neurosurgery, which received 28 (6.2%), 26 (5.7%), 25 (5.5%), 23 (5.1%) and 23 (5.1%) students, respectively. In 2012, the top five departments were pediatrics, surgery, obstetrics and gynecology, cardiovascular, and emergency, which received 47 (7.0%), 37 (5.5%), 37 (5.5%), 32 (4.8%) and 30 (4.5%) students, respectively. Data could not be aggregated for 2013.

Proportion of exchange students from partner schools

Data were unavailable for 2011 and 2012. In 2013, 208 (61.9%) international exchange students were from partner schools.

Assessment or selection process of exchange students from abroad

Some form of assessment or selection process was used in 48% and 54.4% of cases in 2011 and 2012, respectively. This was also the case for 52.5% and 41.0% of exchange students from partner schools and non-partner schools, respectively, in 2013. It should be noted, however, that 34.4% of universities did not provide a response to this question in 2013.

Tuition and internship fees of exchange students from abroad

Tuition and internship fees from the accepting schools were and were not waived in 8.9% and 89.3% in 2011, and 10.5% and 87.7% of cases in 2012, respectively. Data could not be aggregated for 2013.

Housing of exchange students from abroad

Housing was provided in 69.6% and 80.7%, and not provided in 28.6% and 19.3% of cases in 2011 and 2012, respectively. Data were unavailable for 2013.

DISCUSSION

We conducted a nationwide survey across three consecutive years to follow up on our previous survey conducted across one year examining the participation rate and characteristics of international clinical electives at Japanese medical schools⁷⁾. The 100% response rate is unique and allows for an unprecedented comprehensive survey. The results of this survey revealed the current trends and problems in undergraduate international medical education in Japan.

Number of exchange students

Throughout the three years, 70 out of 80 universities across the nation sent approximately 700 to 800 exchange students abroad. Of these, approximately 70% of students went on exchange during the official academic semester(s), all of whom received academic credit for their respective courses. According to the results of a nationwide survey conducted by Tokunaga et al. in February 1996, only 10 universities (15.4% of total responses) were considering improving their curriculum by partnering with foreign hospitals⁸⁾. Other studies suggested that only progressive Japanese universities formed partnerships with foreign universities in 1995–2000 to initiate exchange

programs within the official curriculum⁹⁻¹¹). These results suggest that medical education in Japan has undergone major internationalization efforts in the last 15 years; in particular, international exchange programs have evolved from being short programs undertaken within vacation periods and sponsored by organizations such as the Japan Medical Education Foundation or the Noguchi Foundation¹²), to being a large, nationally recognized concept, under which students from close to 90% of Japan's medical universities participate in exchange programs as part of their official academic curriculum. Moreover, 20–30% and 70–80% of schools provide preparatory education in- and outside of class, respectively, demonstrating the proactive support systems established for exchange programs by today's universities.

Inter-university disparities

This survey also revealed inter-university disparities in exchange program initiatives. While some universities sent a constant number (40–60) of students on exchange throughout the three surveyed years, others did not offer exchange programs at all. Further, the top ranking institutions, with regards to the highest number of exchange students, were the same across the three years. We used these participation rates to assume the extent to which each university places emphasis on internationalizing its medical education. Our data indicate that for the majority of exchange programs, 6th year students selected by the universities undertook practical internships lasting 2–4 weeks that were approved for academic credit. Exchange programs offer benefits between partner schools and allow universities to share responsibilities. For example, providing mutual support for students, including financial support for tuition fees and living costs, reduces the expenses to the university and individuals. Such partnerships also secure the safety of the exchange students and eliminate obstacles related to proving identification. As such, the number of partner schools that a university is associated with is a major determining factor for the extent of their exchange programs. We hypothesize that this may explain the range in the numbers of exchange students between universities, which supports the findings of our previous research⁷).

Destination preferences

The majority of Japanese exchange students travelled to destinations in Western and Asian countries, with approximately 70% of students choosing to study in Europe and North America. This is in contrast to a study by Miranda et al., who found that 40% of medical students from Britain selected destinations in developing countries in which to complete their elective internship before graduation¹³). In general, students from Western countries tend to choose exchange destinations with a different cultural background or medical provision system to their own, such as Asia or South America, to not only acquire medical knowledge and techniques, but to broaden their perspectives as future physicians on global health¹⁴). In this respect, the intentions of Japanese medical students appear to be markedly different; in general, Japanese students want to go to countries where English is spoken as the native language, presumably to build medical knowledge or experience through exposure to the language. Additionally, their preference may reflect their desire to study in Western countries where education on pathological history or physical examinations is superior⁷). Further, universities with many Western partner schools would more likely send their students on exchange to Western countries. Interestingly, a study examining exchange destinations for nursing students found that developing countries provide more educational benefits than developed countries for the long-term goal of acquiring global perspective¹⁵). Considering the international role that Japan holds within Asia, it may be important to promote exchange programs to non-Western destinations, particularly developing countries.

International exchange students from abroad

We found that the number of exchange students from abroad and the number of universities hosting exchange students gradually increased across the three years. The majority of international exchange students originated from Asian countries such as South Korea, Thailand and Taiwan, which may reflect the prevalence of partnerships between Japanese universities and those throughout Asia. In addition, Japan may be an attractive destination for Asian students whose native language is not English, since mastering the English language in Japan would not be a major concern compared to Western countries. The majority of international exchange students were 5th and 6th year students who stayed for 4 weeks. It is likely that, like Japanese students on exchange abroad, international exchange students from partner schools participating in internships lasting a certain period of time in Japan can acquire internship credits in their own universities. Pediatrics was the most popular medical department, which may reflect the international interest in current, cutting-edge Japanese pediatric medicine in a country with extremely low infant mortality¹⁶. Partner schools also mutually offered housing and exemption of tuition fees to reduce the financial burden on exchange students.

Limitations of the study

Since this three-year survey was completed four years ago, it is likely that the number of exchange students as well as other figures, consistent with our observed trends, may have increased. The results of an ongoing annual survey on international exchange programs led by the board of the Association of Japanese Medical Colleges should reveal the current day figures. Furthermore, our data was an aggregation of data from a large-scale survey, so detailed information on individual universities was beyond the scope of this study.

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CONFLICT OF INTEREST

All authors state that there are no conflicts of interests to declare.

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