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Are residents learners or workers? A historical perspective in Japan

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I. INTRODUCTION

Many countries enforce limits on the number of hours that medical residents work. For example, in the United States, regulations about duty hours were instituted by the Accreditation Council of Graduate Medical Education as early as in 2003, reinforcing those limits in 2011 and again in 2017 (Accreditation Council for Graduate Medical Education, 2017). These reforms triggered discussion in medical education literature about their wide-ranging effects on resident education, resident wellness, and patient care (Bolster & Rourke, 2015).

In Japan, restrictions on working hours will be implemented for physicians in April 2024 (Shibuya & Unno, 2019). Because of its rapidly shifting demographics to being a super-aged society with a low birth rate, Japan is now facing issues with residents' learning and working that other countries will need to confront in the near future as their populations shift as well (as of late 2020). Here we report on the history and current situation of postgraduate medical education in Japan, which are highly relevant to re-evaluating postgraduate training in other countries.

II. INTRODUCTION OF WESTERN-STYLE MEDICAL EDUCATION TO JAPAN

Up to and throughout the Edo period (1603–1868), there were no qualifications required for someone to become a physician; they learned in apprenticeship or learned by

reading medical books on their own (Izumi & Isozumi, 2001).

At the beginning of the Meiji era (1868–1912), the Japanese government introduced German medicine to the medical education system in Japan. In 1871, the government invited German medical teachers to the precursor of the University of Tokyo (Daigaku To-ko) (Izumi & Isozumi, 2001). In the years that followed, many graduates from that school were in charge of medical education at medical schools nationwide. The German-style medical education system, therefore, spread throughout Japan and the German impact on the Japanese system of medical education is still evident. For example, Japan's current six-year undergraduate medical educational system has Germanic origin. Thus, although Japan introduced Western-style medical education, there was no systematic system of postgraduate medical education in this era.

III. EARLY INTERNSHIP PROGRAMME AND DEVELOPMENT OF NEW POSTGRADUATE MEDICAL TRAINING SYSTEM

From the end of World War II until the 1980s, the Japanese medical education system was reconstructed as a result of Japan coming under American influence. In 1946, the present national licensing system for physicians and first medical internship system were implemented. The educational content of this early internship programme, however, was lacking, as were the financial arrangements for the interns. Trainees had

no guarantee of their status, and the first-year residents were required to work as volunteers before taking the national medical license examination (Shukan Igakukai Shimbun, 2004).

In the late 1960s, protests by medical students at the University of Tokyo for the improvement of interns' working conditions progressively intensified and spread to other universities as well. Students across the country boycotted the medical license test and those in Tokyo occupied the Yasuda Auditorium (a symbol of the University of Tokyo) in protest. There was recognition that the internship programme as it was, with its overworked trainees, could lead to patient safety issues related to possible errors by the fatigued interns. This problem of patient safety is still a topic of discussion worldwide, and led to the limit of 80 hours of work per week for residents in U.S. training programmes mentioned in the introduction.

As a result of the protest, the internship system was discontinued in 1968, and a postgraduate medical training system was introduced to replace it. In this system, students took the medical license examination following graduation, and then received specific training for at least two more years. This strengthened the quality of the education compared to the previous system, but the status and pay of the trainees remained unstable (Shukan Igakukai Shimbun, 2004). Graduate students were forced to work part-time jobs during their training. They also raised issues related to the content of their education, inadequate guidance system, and insufficient evaluation of the training received.

In 2004, a new two-year mandatory postgraduate medical training system was implemented in all training programmes (Shukan Igakukai Shimbun, 2004). In this system, all medical school graduates spend two years rotating through the seven specialties (internal medicine, surgery, emergency medicine or anaesthesiology, paediatrics, psychiatry, community-based medicine, and obstetrics and gynaecology). Then only after the two-year training, can young physicians enter specialty-based residencies. Owing to this reform, the average resident salary has increased, and residents are paid sufficiently to concentrate on their training. Moreover, with respect to learning, this system has enabled residents to obtain more experience and become more confident about their clinical skills and the efficiency of their general knowledge (Nomura et al., 2008).

IV. WORK STYLE REFORM

The Japanese economy grew dramatically after World War II. At that time, ideal workers were considered to be

those who spent all their time working. The epitome of this attitude is captured in the phrase "Can you work for 24 hours?" which became popular after originating from a Japanese TV advertisement for an energy drink. Japan was notorious for its long working hours, and because it also became an aging society, where a relatively small number of working-age people must support a large senior population, there was a need to raise productivity. Death by overworking was so frequently occurring in Japan that it even had its own name, *Karoshi*, which literally means "death by overwork." As a result, work-life balance started to get a lot of attention as the solution to avoid this social problem.

Medical care in Japan has long been supported by the self-sacrificing work of physicians, especially young doctors in their twenties and thirties (Shibuya & Unno, 2019). According to an investigation performed by the Ministry of Health, Labour and Welfare (MHLW), 40% of physicians exceed the norm for hours worked by workers in other sectors. More than 10% of physicians work more than 1860 hours of overtime per year (Ministry of Health, Labour and Welfare, 2019). Because of this, the MHLW drew up a contentious plan to restrict physicians' working hours through a regulation that will take effect in 2024. In particular, physicians' overtime hours will be restricted to 960 hours per year, to keep hours below what is called the "Karoshi Line" (the number of hours beyond which a death is presumed to be related to overwork). There will still be allowances in the regulation for some physicians to work up to 1,860 hours yearly overtime, far above the Karoshi Line, if necessary to maintain community health care or to work intensively for the purpose of learning and becoming specialists.

V. RESIDENT AS LEARNER OR WORKER?

In Japan, the view of residents has vacillated over time between the perspective of "resident as learner" and that of "resident as worker." Until the repeal of the early internship system in 1968, the viewpoint of "resident as learner" was dominant, and trainees were obliged to work unpaid. In the course of abolition of the early internship system, the standpoint of "resident as worker" was enhanced. The perspective of "resident as learner" was revisited through the process of the new two-year postgraduate training system implementation in 2004.

Nowadays, the viewpoint of "resident as worker" draws attention because physicians and residents are still forced to work for prolonged hours. Because of this, burnout among medical residents has become a critical problem, and several studies have been conducted on the mental health of residents in Japan. This suggests that the pendulum has swung too far and the perspective of "resident as learner" is now lacking. We must develop

and implement resident education that emphasises their roles as both learners and workers, for the sake of the patients they care for and for society's sake.

The implication of this is that we will need to educate residents effectively and efficiently within a limited number of work hours. The duty hour restrictions will raise the number of trainees caring for a particular patient on any given day, and will push up the demand for meaningful and efficient transfer of information. We will have to teach "new professionalism." New professionalism derives from sharing responsibility for patient care, as contrasted with nostalgic professionalism, which is defined as continuously giving priority to a patient's needs over one's own personal needs (Arora, Farnan, & Humphrey, 2012). Trainees have to be taught a new view of their responsibilities and new skills for directing team-based care. More specifically, they should be taught the skills of quickly summarising and communicating pertinent sign-out information at the end of shifts to support patient care. The model of continuity-enhanced handovers may be useful (Arora, Reed, & Fletcher, 2014).

It is our responsibility as educators and leaders to seek breakthrough solutions to promote an educational system that emphasises both the perspective of "resident as learner" and that of "resident as worker." It is time for change.

Notes on Contributors

Hirohisa Fujikawa contributed to the acquisition, analysis and interpretation of the data and the drafting of the manuscript. He approved the final manuscript, and agreed to be accountable for all aspects of the work in ensuring that questions related to any part of the work are appropriately investigated and resolved.

Daisuke Son contributed to the conception and design of the study, and the revision of the manuscript. He approved the final manuscript, and agreed to be accountable for all aspects of the work in ensuring that questions related to any part of the work are appropriately investigated and resolved.

Masato Eto contributed to the conception and design of the study, and the revision of the manuscript. He approved the final manuscript, and agreed to be accountable for all aspects of the work in ensuring that questions related to any part of the work are appropriately investigated and resolved.

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Declaration of Interest

The authors declare no conflicts of interest associated with this manuscript.

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