



Dental Hygienists in Japan

Sang-Hwan Oh^{1,†}, Rumi Nishimura², and Masaru Sugiyama³

¹Department of Dental Hygiene, College of Medical Science, Konyang University, Daejeon 35365, Korea,

²Department of Oral Epidemiology, Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, 734-8553, ³Graduate School of Biomedical and Health Sciences, Hiroshima University, Hiroshima, 734-8553, Japan

The purpose of this study was to determine the status of dental hygienists in Japan. The study explicated the history, core curriculum, National Examination for Dental Hygienists, work roles of dental hygienists, and workplaces of dental hygienists. This study was based on the government policy report on dental hygienists and the information published by each public institution. The latest statistics presented by the institutions were collected through official websites. The employment information of graduates from Hiroshima University was analyzed based on actual field study. The results of the study revealed that social demand for dental hygienists has steadily increased and policies and education have been revised accordingly. The work roles of dental hygienists have expanded to meet the needs of the treatment and those of public health fields. In line with major policy changes, the educational period has been extended from 1 year to 3 or 4 years, while the mandatory credits for graduation have been established. Licensing examinations were being performed by the local governments since 1948 due to the different situations of dental hygienists in different areas. In 1992, they were converted into a single national examination. The work roles have expanded from assisting dental treatments to health guidance, home care, and perioperative care. Consequently, the number of dental hygienists has increased, especially in healthcare facilities for the elderly. Dental hygienists perform various roles. However, the most essential role is to provide the best oral care services to the patient. The expected role of dental hygienists has expanded in alignment with public healthcare needs and support for the elderly. The government and universities are expected to bring about improvements such as diversifying the channels of education and establishing policies to respond to growing patient needs by cultivating excellent dental hygiene professionals.

Key Words: Curriculum, Dental hygienist, Japan, National examination

Introduction

In Japan, dental hygienists are defined as health care practitioners mainly involved in the prevention of dental and oral diseases¹. Dental hygiene in Japan can be a profoundly important issue from various perspectives. Dental hygienists were not legally recognized in the past. However, the dental hygiene education program has been improving since 1948 after the Dental Hygienist Act was established. Currently, there are 158 schools for a 3-year dental hygiene education program and 13 schools for a 4-year dental hygiene education program². According to

the International Federation of Dental Hygienists, there are 291,910 dental hygienists in Japan³. Japan is now a super-aged society. Hence, the role of dental hygienists is essential in promoting oral health⁴. The purpose of this study was to analyze the status of dental hygienists in Japan, focusing on the history, core curriculum, national examination for dental hygienists, work roles of dental hygienists, and workplaces of dental hygienists.

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[†]Correspondence to: Sang-Hwan Oh, <https://orcid.org/0000-0002-5944-0129>

Department of Dental Hygiene, College of Medical Science, Konyang University, 158 Gwanjeodong-ro, Daejeon 35365, Korea
Tel: +82-42-600-8447, Fax: +82-42-600-8406, E-mail: dentsh27@konyang.ac.kr

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The Past and Current Status of Dental Hygienists in Japan

1. History of fostering dental hygienists in Japan

Until 1947, dental hygienists were not legally recognized in Japan despite the fact that dental hygienist training was introduced in 1915 by the United States of America⁵⁾. In 1948, the Dental Hygienist Act, was established under the direction of the General Headquarters of the Allied Forces. This act is aimed at dental prophylaxis and improvement of oral hygiene⁶⁾. In 1949, dental hygienist schools were established at five health centers and two colleges⁷⁾. The educational period was 1 or 2 years in those days. The primary role of dental hygienists at health centers was to prevent caries and gum diseases⁶⁾. The Ministry of Health entrusted health centers having dental departments with the task of fostering dental hygienists; however, the number of qualified dental hygienists was smaller than the expected number. Unfortunately, the entrusting system was discontinued soon after it was established. Thus, training of dental hygienists was required to dental hygienist schools congruent with dental schools⁸⁾.

It was difficult for inexperienced dental hygienists to continue working at health centers, which needed experienced dental hygienists. Hence, most of the dental hygienists were working at dental clinics and assisting dental treatments. Therefore, the Dental Hygienist Act was revised in 1955 and dental assistance by dental hygienists was legally permitted^{6,9)}.

Since training for dental hygienists generally started as a 1-year course, it was difficult to learn the required syllabus within the course duration. Hence, the educational period was extended to a minimum of 2 years in 1983^{6,9)}. In order to adapt to the changes in dental health caused by aging, the Dental Hygienist Act was further revised in 1989 and licensing for dental hygienists was transferred from the local governors to the Minister of Health⁶⁾. At the same time, a third role (dental health guidance) was added, since dental hygienists had provided health guidance at clinics and in public health activities under the supervision of a dentist for a long time^{6,9)}. In 1992, dental professionals were permitted to charge a patient under medical insurance

when a dental hygienist provided dental health guidance under the supervision of a dentist⁶⁾. This change in medical insurance drastically accelerated the employment of dental hygienists at dental clinics⁶⁾. Furthermore, the demand for oral care for the elderly increased, as some studies revealed that oral care provided by dental professionals reduced the occurrence of aspiration pneumonia, the most common cause of death in the elderly¹⁰⁾. Subsequently, the Ministerial Ordinance was revised in 2004 and the minimum educational requirement for dental hygienists was changed to 3 years^{6,9)}. In the same year, a 4-year course started at two national universities and is currently available in 13 universities^{2,9)}. In 2010, the extension of educational period was accomplished throughout Japan⁹⁾.

The number of dental hygienist schools has been increasing to date⁶⁾. In 2020, the total number of dental hygienist schools included 171 in total comprising 142 vocational schools, 16 junior colleges, and 13 universities²⁾. The job-applicant ratio for dental hygienists was 20 in the 2020 survey on education in dental hygienist schools¹¹⁾. The overall percentage of freshmen was 86.1% among the total number of students; however, the number of freshmen did not reach the full capacity in 61.3% of the schools.

2. Core curriculum

1) Background¹²⁾

In order to ensure high-quality dental health and treatment for people with growing demands for health and treatment, it is crucial to increase the number of dental hygienists and to improve their quality. However, the regulations for dental hygienist schools revised in 2004 by the Ministries of Health and Education indicated only the outline of the educational contents and not the details. Therefore, dental hygienist schools requested the Japan Association for Dental Hygienist Education for the specified educational content guideline applicable for all the students. Thus, the Association started a discussion regarding guidelines. In March 2010, the Association set the "Basic Model Curriculum," just before the 3-year course, which became mandatory at all schools from April, 2010. This curriculum was devised as dental

hygienist schools strongly requested educational model plans. The “Basic Model Curriculum” involved all of the table contents in a set of Textbook for Dental Hygienists. Subsequently, Core Curriculum for Dental Hygiene Education was established in 2012 following the discussion on the contents of the Core Curriculum.

In 2014, the Promotion Act for Comprehensive Security of Cure and Care in Communities was promulgated in order to promote security of the medical staff and cooperation with them. In 2015, the Ministry of Health laid down “Guidelines for Dental Hygienist School” and the authority to designate and supervise dental hygienist schools was delegated by the Minister of Health to the local governors. In 2017, 5 years after establishing the Core Curriculum for Dental Hygiene Education, criteria for formulating questions in the National Examination for Dental Hygienist were revised. In the new criteria, the number of items related to aging and oral function increased and items of dental health in disasters and international dental health were added. Revision of the Core Curriculum was needed to incorporate these changes.

2) Basic concept of Core Curriculum¹²⁾

The amount of information regarding dental hygiene had increased remarkably and specialization in the medical field and advances in technology had progressed dramatically. Therefore, it was impossible for students to acquire vast amounts of knowledge and skills before graduation. The Core Curriculum for Dental Hygiene Education aimed to teach practical skills (knowledge, technique, and attitude) that students needed to acquire until their graduation. The Japan Association for Dental Hygienist Education recommended that characteristic education should be added in each school, especially in schools having a 4-year-course. Table 1 shows the contents and credit numbers in the Core Curriculum for Dental Hygiene Education.

3) Fundamental qualities required for dental hygienists¹²⁾

- (1) Ability to adapt to advances in dentistry and changes in the social environment
- (2) Broad knowledge and rich personality

- (3) High quality of ethics
- (4) Ability to contribute to self-improvement
- (5) Ability to cooperate with other professionals
- (6) Ability to decide the course of action based on evidence-based medicine

3. National Examination for Dental Hygienists¹⁾

Dental hygienists have been qualified by the national government since 1948. However, licensing itself was being performed by a local governor for a long time, as examination and licensing had been delegated by the national government to the local governments. In 1989, the Dental Hygienist Act was revised and licensing was transferred from the local governors to the Minister of Health. However, licensing examinations consisting of written, oral, and practical components were still being conducted by the local governments. The National Examination for Dental Hygienists started in 1992. The details of the Japanese National Examination for Dental Hygienists are shown in Table 2.

4. Work roles of dental hygienists⁶⁾

Under the Dental Hygienist Act established in 1948, dental hygienists were permitted to provide only preventive

Table 1. Core Curriculum for Dental Hygiene Education in Japan

	Education content	Credit (n)
Basic subject	Basis of scientific thinking	10
	Human beings and their lives	
Basic specialized subject	Anatomy and function of the human body	4
	Anatomy and function of the oral cavity	5
	Pathopoiesis process of diseases and acceleration of recovery from them	6
	Professions and social systems related to oral health	7
Specialized subject	Outline of dental hygienist	2
	Clinical dental sciences	8
	Dental preventive treatment	8
	Dental health guidance	7
	Dental treatment assistance	9
	Clinical practice	20
Elective required subject		7
Total		93

Table 2. Details of Japanese National Examination for Dental Hygienists

Eligibility for examination	A person who has graduated from a dental hygienist course (or is expected to graduate in the end of the fiscal year). A person who has graduated from a dental hygienist course abroad. A person who has obtained a dental hygienist's license abroad.
Examination period	1 day
Examination content	Core curriculum (basic subjects, basic specialized subjects, specialized subjects)
Examination method	Written examination (multiple-choice test)
Acceptance criterion	Over 132/220 points (in 2020) Over 60% in the percentage of correct answers
Percent of successful examinees	94.3% (in 2020)

dental treatment under the direct supervision of a dentist. Preventive dental treatment included mechanical removal of deposits from the exposed surfaces of teeth and from healthy subgingival areas and application of medical preparations to the teeth and the oral cavity.

The Dental Hygienist Act was revised in 1955, as most of the dental hygienists were working in dental clinics in 1954. Dental hygienists were officially permitted to assist dental treatments. Dental assistance included simple impression making, application and removal of temporary seals, and filling and polishing of dental materials.

In 1989, licensing for dental hygienists was transferred from the local governors to the Minister of Health and dental health guidance was officially added as the third role of dental hygienists in the revised Dental Hygienist Act. After this revision, it became possible for dental hygienists to provide health guidance in various settings. Notably, in 1990, dental professionals were permitted to charge the patients under medical insurance when a dental hygienist visited to provide oral care and health guidance to a patient at home under the supervision of a dentist. In 1992, similar charging was permitted when a dental hygienist provided health guidance regarding dental diseases at clinics. In 2012, charging for perioperative oral care management by a dental hygienist was also permitted under medical insurance¹³⁾. These changes have provided dental hygienists with many opportunities to provide oral care and health guidance in various settings.

The services currently provided by Japanese dental hygienists are as follows¹⁴⁾.

1) Prevention of caries and gum diseases

- (1) Specialized treatments to prevent caries and gum diseases and to maintain and improve the health of the oral cavity
- (2) Scaling and root planing
- (3) Application of caries-preventive agents such as fluorides and sealants

2) Assisting dentists in dental treatment

Supervision of a dentist is mandatory.

- (1) In general practice
 - ① Handling a dental vacuum
 - ② Applying a rubber dam
 - ③ Mixing dental cements
- (2) During operation
 - ① Handing instruments and materials to the dentist

3) Providing individual and group health guidance to induce behavioral changes

- (1) Instructing proper oral hygiene techniques for maintaining healthy teeth and gums
- (2) Instructing the importance of nutrition for maintaining optimal oral health
- (3) Providing oral care for senior citizens requiring long-term care

5. Workplaces of dental hygienists

1) Workplaces of dental hygienists¹⁵⁾

Dental hygienists were expected to perform dental prophylaxis at health centers, just after the Dental Hygienist Act was established in 1948. However, only a

Table 3. Percentage of Dental Hygienist Working at Each Occupation in the National Survey

Private dental office		90.5%
Others	Public health center	0.5%
	Municipality	1.6%
	Hospital	5.0%
	Healthcare facility for the elderly	1.0%
	Dental industry	0.2%
	Dental hygienist school	0.7%
	Others	0.4%

Statistical surveys conducted by Ministry of Health, Labour and Welfare, 2018¹⁵⁾. Retrieved November 18, 2020, from <https://www.mhlw.go.jp/toukei/saikin/hw/eisei/18/dl/gaikyo.pdf> (2018).

small number of dental hygienists could work at health centers, as the centers needed experienced dental hygienists. In fact, only 7% of the dental hygienists were working at health centers in 1954 compared to 30% working in 1953. On the other hand, over 45% of the dental hygienists were working at clinics in 1954 compared to 25% working in 1953. The percentage of dental hygienists working at dental clinics has increased and over 90% of the dental hygienists are working at dental clinics (Table 3). These results indicate that dental clinics are the main workplaces for dental hygienists in Japan. Surveys conducted by the Ministry of Health have shown an increase in the number of dental hygienists working at public health centers, municipalities, hospitals, healthcare facilities for the elderly, dental industries, and dental hygienist schools. However, the total number of dental hygienists has increased significantly. Therefore, no obvious change was observed in the percentage of dental hygienists working in each of these fields.

2) Workplaces of graduates from Hiroshima University

Table 4 shows the workplaces of graduates from Hiroshima University just after graduation. There were obvious differences between the survey by the Ministry of Health and the survey by Hiroshima University. According to the survey by Hiroshima University, the percentages of graduates working at hospitals and dental industry were greater than those reported in the national survey. According to the survey by Hiroshima University, 13.9% of the graduates were students at postgraduate

Table 4. Percentage of Dental Hygienist Working at Each Occupation in the Survey for Graduates from Hiroshima University

Private dental office		38.3%
Others	Public health center/municipality	3.5%
	Hospital	26.5%
	Dental industry	4.3%
	Dental hygienist school	0.9%
	Yogo teacher	10.4%
	Others (admission to graduate school)	16.1%
		(13.9%)

Statistical surveys conducted by professor Sugiyama, Hiroshima University, 2018.

schools. Our preliminary data have shown that almost all dental hygienists who finished graduate schools are employed at hospitals, public health centers/municipalities, dental industry, or dental hygienist schools, but not at private clinics. Hiroshima University is one of four national universities with a 4-year dental hygienist course. However, similar tendency is also observed at other dental hygienist schools with a 4-year course.

Conclusion

Japan has a long history of dental hygiene education dating back to 1915. To date, there are 291,910 dental hygienists³⁾ in Japan. The roles of dental hygienists have expanded; however, the number of dental hygienists working at private clinics is still higher than that in other fields. However, dental hygienists who have completed a 4-year course and postgraduate school have been employed in various fields. As preventive dental professionals, dental hygienists provide adequate services to improve patients' oral health. Therefore, dental hygienists in Japan play an important role in the health sector.

Notes

Conflict of interest

No potential conflict of interest relevant to this article was reported.

Ethical approval

This study is a review-based study and does not require

an IRB review.

Author contributions

Conceptualization: Sang-Hwan Oh. Data acquisition: Rumi Nishimura, Masaru Sugiyama. Formal analysis: Rumi Nishimura, Masaru Sugiyama. Supervision: Masaru Sugiyama. Writing—original draft: Rumi Nishimura, Masaru Sugiyama. Writing—review & editing: Sang-Hwan Oh, Rumi Nishimura, Masaru Sugiyama.

ORCID

Sang-Hwan Oh, <https://orcid.org/0000-0002-5944-0129>
 Rumi Nishimura, <https://orcid.org/0000-0003-3385-7329>
 Masaru Sugiyama, <https://orcid.org/0000-0001-6593-956X>

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