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## Dental hygiene education in Japan: present status and future directions

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**Abstract:** The aim of this report is to provide basic information about the historical development, current status and future needs of education and training of dental hygienists in Japan. The first formal training of dental hygienists in Japan started at Tokyo in 1949. Restructure and modification of the dental hygiene education system has been reiterated over the years in order to satisfy the needs of the constantly changing society. Although previously only vocational training was provided for dental hygienists, higher-level education has been conducted. The present legislation of dental hygiene has gone through a complicated process. The student should take the dental hygienist licensing examination which is held once a year by the National Board organized by the Ministry of Health, Labour and Welfare. Currently there are 136 dental hygiene schools and the total enrolment is about 7000. The duration of dental hygiene education course has been prolonged from 2 to 3 years since 2001. In 2004, the 4-year course started. The 2-year dental hygiene education program is expected to be replaced with the 3- and 4-year courses by 2010. The dental hygiene education system in Japan will be improved in many ways as dental hygienists are expected to participate in health promotion and preventive care, and to gain knowledge of the economics and organization of health care in relation to oral hygiene.

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**Key words:** dental hygienist; historical development; education system; licensing examination; regulation

### Introduction

The dental hygiene profession faces the challenges of new developments in technology and demands for quality control, quality assurance and quality improvement.

Aging in Japan is soaring at a rapid rate. There were 21 million elderly people in 1999, which accounted for 16.7% of the population (1), and one in every six persons of the total population was 65 years old or older. Compared with aged people, the number of juveniles (age 0–14) has decreased by 31 600 annually and the working population (age 15–64) has decreased by 160 000 annually. By year 2020, one in four persons is estimated to be aged 65 years or more, and the aging rate will be about 25%, thus becoming the highest in the world (2). Dental hygienists have to realize and adapt to the needs of the ever-changing society, which requires changes in the current education system. Previously, there was no bachelor course for dental hygiene, and there was a shortage of research for dental hygiene. The duration of the Japanese dental hygiene education courses has been extended after research and careful evaluation of dental hygiene in Japan. From year 2004, it has been upgraded to university level, so that the education will be able to meet the current requirements of Japanese society. The requirement for scientific-based education entails the teaching staff including professionals who possess not only dental hygiene experience but also higher qualifications such as Doctor's or Master's degree.

The present report discusses the historical development, current status and future needs of education, and training of dental hygienists in Japan.

## Certification system

Certification of Professions in Japan is classified into two major categories: one is mandatory certification for 'exclusive

profession', such as the licenses for physicians and dental practitioners; the other is the certification for 'exclusive name', which allows a practitioner to be declared as a specialist, for example, certified social workers and care workers (1). Legally, duties for dental hygienists are divided mainly into three parts, namely, dental prophylaxis, dental assisting and dental health education. In Japan, dental assisting includes not only assisting in dental practice but also dental treatment such as subgingival scaling, root debridement and placement of temporary restorations. The dental hygienist is allowed to perform certain dental treatment under the supervision of a dental practitioner, suggesting that the dental hygienist is capable of performing a part of dental treatment (3, 4). A dental hygienist is not allowed to take X-ray radiographs. Dental prophylaxis, and dental assisting performed by a dental hygienist, fall under the category 'exclusive profession' whereas dental health education is categorized in 'exclusive name' (5) There has recently been a gradual, but increasing shift to collaborative practice, whereby the dental practitioner and dental hygienist jointly decide the services required.

## Historical development

An overview of the historical development of dental hygienists' training is summarized in Table 1. In 1921, Professor Okada in Keio University tried to train medical nurses for dental hygiene without success. When dentistry was introduced in health centers in January 1948, legislation for dental hygiene was considered and announced officially in August 1948. In the beginning, the activities of dental hygiene at health

**Table 1. History of dental hygiene in Japan**

Year	
1947	Amendment of the regulation of health center
1948	<ul style="list-style-type: none"> <li>• Establishment of a council in related to dentistry of a health center</li> <li>• Proclamation legislation of dental hygiene (Dental prophylaxis assisting was approved as 'exclusive profession' for dental hygienist)</li> </ul>
1949	The first dental hygiene 1-year diploma program was established
1950	Enactment regulation appointed to dental hygiene educational institution or school
1951	<ul style="list-style-type: none"> <li>• School of dental hygiene, Faculty of dentistry, Tokyo Medical and Dental University was established (1-year course)</li> <li>• Foundation Association of Japan Dental Hygiene</li> </ul>
1955	Amendment of the legislation (Dental assisting was approved as 'exclusive profession' for dental hygienist)
1956	Amendment of the regulation
1959	2-Year course started at School of Dental Hygiene, Faculty of Dentistry, Tokyo Medical and Dental University
1969	Amendment Regulation of School Education (Settlement of a vocational school system)
1983	Amendment of the regulation (Implementation study duration expansion from 1-year course to 2-year course by 1988)
1989	Amendment of the legislation (Authorizer sifted from governor of residence to the Minister of Health and Welfare. Dental health education was approved as 'exclusive name' for dental hygienist)
1992	Implementation of the first national dental hygienists licensing examination
2001	3-Year course dental hygiene education started.
2004	4-Year course dental hygiene department newly established at Tokyo Medical and Dental University, and Niigata University

centers were temporally covered by public nurses who took a course in dental health, because education of dental hygienists for public health was delayed. When the legislation was planned, the committee thought that the education for dental hygienists required at least 2 years or more. However, a 1-year course for applicants such as high school graduates was established and the dental hygiene practice was performed under the supervision of a dental practitioner (7).

In Japan, initially dental hygienists were educated as health workers who worked at health centers. However, as several institutions started to establish schools of dental hygiene and dental hygienist had more opportunities for working at dental offices, the guidelines for education, therefore, had to be revised by the Ministry of Education, and the Ministry of Health and Welfare. The regulation for dental hygiene education was established as a ministerial ordinance of the Ministry of Health and Welfare, and the Ministry of Education in 1950. The dental hygiene act was revised in 1955. According to the provisions of this act, the government would provide full funding. Dental assisting was also introduced at that time. Since then, the number of dental hygienists working at dental offices has been increasing gradually. In the beginning, dental hygiene education started as a 1-year course. Both students and instructors of dental hygiene had a number of complaints about the course duration since it was not long enough to cover the required syllabus. As a result, the first 2-year dental hygiene education course was established in Tokyo in 1959 (6, 7). Another major change was made in 1989 when dental health education was introduced and approved under the category of 'exclusive name' for dental hygienist (5, 6). The present general plan of dental hygiene education, which was approved by the Ministry of Education and the Ministry of Health, Labour and Welfare has gone through a complicated process. In 1999, a new committee was appointed to re-evaluate the syllabus of dental hygiene education based on present and future needs, to consider the practical aspect of the training, and to propose how the relation between theory and practice could be improved (8). Currently, no evidence is available to indicate a direct relation between health problems within the ageing population and a need for more qualified dental hygienists. However, it has been shown that a high correlation between aspiration pneumonia and oral care (9–11). Dental hygienists, therefore, would be expected to participate in various fields of oral health care actively. The regulations will be made in a public announcement in September 2004, and will be put into practice in April, 2005. The key change is to extend all 2-year courses by at least 1 year. In accordance with this change, the length of education is increased. The accrediting system will

be shifted and the minute instructions on the subjects will be eliminated for bringing out the uniqueness of respective institutions. Regarding to the legislation, it has not been reviewed yet, hence it remains to be seen whether the 4-year graduate will be called something other than a dental hygienist.

## Socio-demographic characteristics and dental hygiene practice

The dental hygienist-to-dental practitioner ratio was 1:82.6 in 1955, 1:3.7 in 1975 and 1:1.3 in 2000. This indicates that the number of dental hygienists has been rapidly and constantly increasing (Fig. 1).

Dental hygienists constitute one of the rapidly growing powers of health service providers in Japan (12). The number of dental hygienists in Japan was the highest among 13 countries (13, 14). As of June 2003, the number of registered dental hygienists in Japan was 189 147. However, only 73 297 people are currently working as a dental hygienist (Fig. 1). This data show full-time and part-time workers.

From the 1960s to 1980s, there was a considerable increase in facilities and enrolment capacity of dental hygiene training schools. As of 2003, there are 136 dental hygiene schools. Two of them are governmental schools, 14 of them are prefectural schools, and others are 120 private schools. Currently, the total enrolment capacity for all the Dental Hygiene training schools over Japan is approximately 7000. After graduating from these schools, many young dental hygienists engage in dental care work at dental offices (Table 2). In 2002, the majority of dental hygienists were aged in 20's and 30's, most of whom were working at private dental offices. In 2002, 54 dental hygienists (0.07%) were involved in welfare work for the elderly, such as in special nursing homes. Many of them were affiliated with private organizations. A total of 65 761 dental hygienists (89.7%) worked in dental offices. Various hospitals employed 3881 dental hygienists (5.3%). Public facilities established by national and local government bodies, employed 2261 dental hygienists (3.01%) and 550 were working for institutions or schools of dental hygiene.

## The dental hygienists licensing examination

Until 1992, licensing examinations for dental hygienists consisting of written, oral and clinical components were conducted by regional governments. Thereafter the certificate was issued based on the national examinations. Standardized examinations were introduced to objectively assess skill levels and secure credibility in society. This modification was to improve the

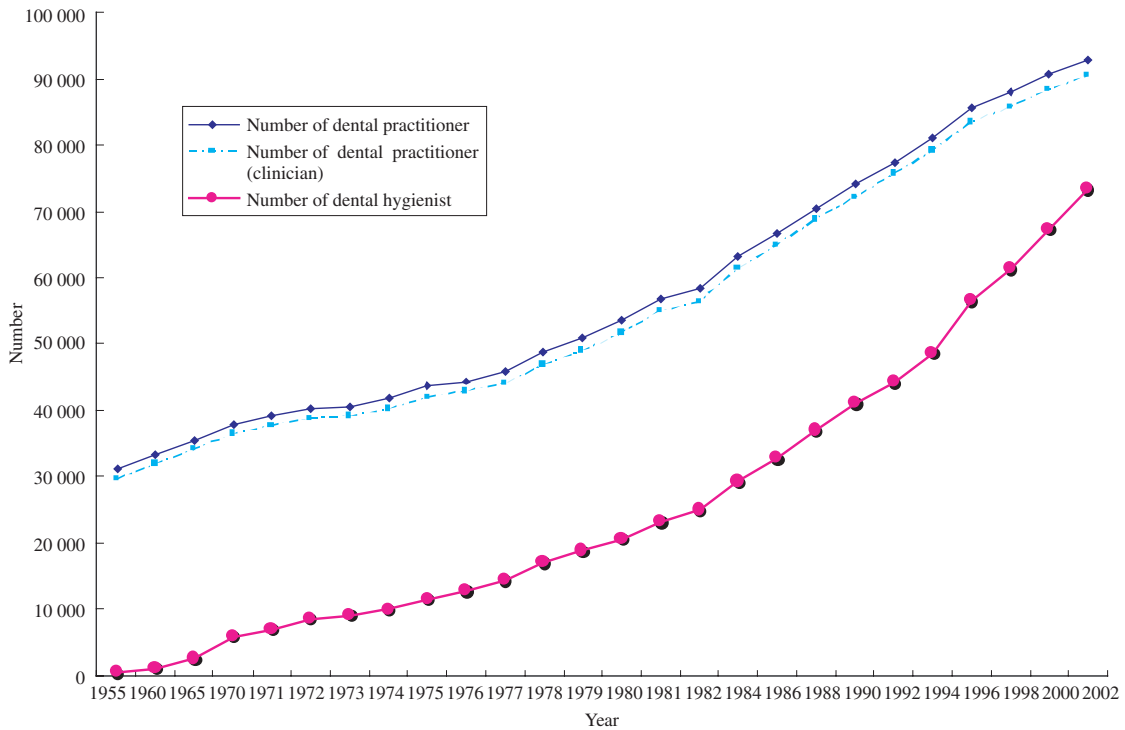


Fig 1. Numbers of dental practitioner and dental hygienists. Numbers of the dental hygienists have been constantly increasing. The rate of dental hygienists increase is more than the rate of dental practitioners. The research for the number of dental hygienists has been reported every 2 years since 1982. Before that, the research had not been implemented periodically. The sources of this figure are from Statistics and Information Department, Minister's Secretariat, MHW 'Statistical Report on Public Health Administration and Services' and 'Survey of Physicians, Dentists and Pharmacists'.

Table 2. Number of the working dental hygienists as shown by age and place of work (2002)

Ages (years)	Total	Places							
		Health centers	Municipal offices	Hospitals	Dental offices	Nursing homes	Companies	Educational institutions	Others
Under 22	5359	–	5	202	5134	–	4	5	9
22	4035	1	6	134	3875	1	4	10	4
23	4040	4	5	148	3867	–	4	5	7
24	4194	2	13	151	4003	2	8	9	6
25–29	17 849	35	87	916	16 608	13	40	101	49
30–34	11 596	74	222	754	10 306	6	71	87	76
35–39	9272	111	329	535	8064	8	66	86	73
40–44	7753	125	377	450	6543	15	68	90	85
45–49	4822	118	269	308	3972	3	32	66	54
50–54	2877	111	195	206	2213	4	41	62	45
55–59	921	51	77	60	685	2	10	16	20
60–64	380	14	25	16	306	–	2	9	8
Over 65	199	2	3	1	185	–	2	4	2
Total	73 297	648	1613	3881	65 761	54	352	550	438

Source: 'Statistical Report on Public health Administration and Services', Statistics and Information, Minister's Secretariat, MHW, Japan.

quality of services as they directly relate to human life and health.

A total of 6838 candidates appeared for the 12th National Dental Hygienists Licensing Examination in 2003, out of

which 6672 (97.6%) passed the examination. The number of licensed dental hygienists at present is 189 147 (15). The examination is held every year. To be eligible for the examination, the candidate has to either graduate from a dental

hygiene education school or institute approved by the Ministry of Education, the Ministry of Health, Labour and Welfare, or has been licensed abroad and has abilities equivalent to a graduate of a Japanese institution.

## Education

In Japan, the duration of dental hygienists' courses was 2 years until in 2001. Recently, the first 3-year courses were established. At present, 19 institutions conduct a 3-year course. 'Reports on quality improvement of dental hygienists' were published in May 2003. Consequently, education regulations of the have been revised by the Ministry of Health, Labour and Welfare. The curricula for training needed to be reviewed according to the advancements in medicine and changes in the dental hygiene needs of different age groups. Training will concentrate on initiation and participation in health promotion and preventive care.

With the increase of dental hygiene training schools that provide 3-year courses, the number of facilities providing 2-year courses is declining. The 2-year dental hygiene education program is expected to be terminated by 2010. Furthermore, the first institutes with 4-year courses for dental hygienists were established in Tokyo and Niigata in 2004. Currently, some of the other schools are considering to develop a 4-year course. The number of institutions offering the 4-year course might be increased in the near future. However, at the present time, no institutions other than Tokyo Medical and Dental University and Niigata University have introduced a 4-year course. The higher education courses focus on the education of dental hygienist to be a leader and a teacher in the field of dental hygiene. Currently dental educators or practitioners constitute a majority of the basic education providers. It is expected that the dental hygienist who complete the higher will education courses participate in the teaching and also act as an advisor to students in the clinical aspects of the training, which involves integration of theory and practice.

## Future developments

Training facilities to develop dental hygiene professionals who are capable of consultation and a long-term care of the elderly at their house are needed. They should also function in stronger co-operation with healthcare professionals to respond to the increasing and diversifying needs in social welfare. It is hoped that these education programs in colleges and universities help the students not only to increase

professional knowledge and techniques, but also to nurture humanitarian ideals.

Previously, no dental hygiene education institutions were accredited to award a bachelor's degree. Currently the requirements for obtaining a bachelor's degree in Japan include in-depth studies in a 4-year dental hygiene course. Problems relating to the balance between the theoretical and clinical dimensions of the program are a recurring theme in the education material. Further, it was deemed important to monitor knowledge development and to exchange information at a scientific level.

## Conclusion

Development of dental hygiene skills has become more important due to increasing technological advances and the increase in aging population. Along with ongoing changes within the educational system, the dental hygiene 4-year program has been established at the beginning of 2004 at the Tokyo Medical and Dental University and Niigata University. An essential goal of university education is seen as promoting the development of life-long learners. The future of education lies in the different ways society might meet the need for research, teaching and learning, services and whether universities will continue to perform these roles or take on new roles.

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