

Competencies of Dental Hygienists for Oral Care Service for People with Disability

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Background: Dental treatment has shifted to the center of the community, and the public policy of the country has expanded to support the vulnerable classes such as the disabled. The dental profession needs education regarding oral health services for persons with disabilities, and it is necessary to derive the competencies for this. Therefore, we conducted this study to derive the normative ability to understand the role of a dental hygienist in the oral health service for persons with disabilities and improvement plans for education.

Methods: We conducted a qualitative analysis for deriving competencies by analyzing the data collected through in-depth interviews with experts in order to obtain abilities through practical experience. Based on the competency criterion, relevant competency in the interview response was derived using the priori method, and it was confirmed whether the derived ability matched the ability determined by the respondent.

Results: The professional conduct competencies of dental hygienists, devised by the Korean Association of Dental Hygiene, consists of professional behavior, ethical decision-making, self-assessment skills, lifelong learning, and accumulated evidence. Also, core competencies of the American Dental Education Association competencies for dental hygienist classification such as ethics, responsibility for professional actions, and critical thinking skills were used as the criterion. The dental hygienist's abilities needed for oral health care for people with disabilities, especially in the detailed abilities to fulfill these social needs, were clarified.

Conclusion: To activate oral health care for people with disabilities, it is necessary for dental hygienists to fulfill their appropriate roles, and for this purpose, competency-based curriculum restructuring is indispensable. A social safety net for improving the oral health of people with disabilities can be secured by improving the required skills-based education system of dental hygienists and strengthening the related infrastructure.

Key Words: Clinical competence, Dental hygienist, Disabled persons, Oral health

Introduction

In the field of dental care for persons with disabilities, dental hygienists can carry out scaling, preventive treatments such as fluoride application, and oral health education. Dental hygienists are also responsible for planning and implementing clinical education programs to facilitate dental practice and cooperation¹. They also play an important role in dental care services for persons with disabilities by performing oral health education projects

and administrative work in the community.

Despite having to perform these practical work, the lack of awareness of dentists and the requirements for dental hygienist's roles in private dental clinics being different from the scope of practice make practical work difficult^{2,3}. As a result, the mismatch between the actual work and the work scope stipulated by law has resulted in work stress and gaps in dental hygienist's role in dental practice⁴.

In previous studies, the need and importance of education and training of dental staff were emphasized⁵⁻⁸.

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However, a study of the current situation of dental hygienists in the field of oral health for persons with disabilities found that 76.3% of dental hygienists had experience in dental treatment for persons with disabilities, whereas 48.7% of dental hygienists had no experience in educating people with disabilities or in oral health management⁹⁾.

These findings suggest that the current curriculum and continuing education after graduation do not provide a solid education on disability dentistry. In addition, there were prejudices toward the disabled due to the problems of dental staff, and a lack of confidence due to a lack of training¹⁰⁾. Dental treatment has shifted to the center of the community, and the public policy of Korea has expanded to support the vulnerable, such as the disabled. The dental profession also needs education regarding oral health services for persons with disabilities, and it is necessary to derive the competencies for this.

Therefore, we conducted this study to derive the normative ability to derive the role of a dental hygienist in the oral health service for persons with disabilities and to derive improvement plans for education.

Materials and Methods

1. Study design

The research was conducted over two years from November 2019 to December 2019. For deriving competencies, we conducted a qualitative analysis of data collected through in-depth interviews with experts to derive abilities through practical experience.

2. Participants

Participants in the study were oral health professionals belonging to a Korean Association for Disability and Oral Health, and educational experts in the dental hygienist field; in addition, seven dentists and six dental hygienists who agreed to take part in this research also participated. In order to be able to freely talk about the practical and educational experience of teaching students in the department of dental hygiene, participants who had experience in the oral health field of persons with disabilities were intentionally selected (Table 1).

3. Data collection

Individual interviews were held in November 2019, and participants were given notice of the research details in advance. Individual experiences and opinions were collected using a questionnaire that was semi-structured; responses were submitted in writing or directly recorded with consent. The content of the capability-based endpoints through additional questions, as needed, was confirmed.

The content of questions regarded about the role and improvement of dental hygienists in oral health services for the disabled in Korea, and the current status of dental hygiene education of oral health for persons with disabilities and the direction of improvement.

4. Analysis

The competency criterion uses core competencies, health promotion and disease prevention, community involvement, and patient/client care detailed abilities in the competency classification of dental hygienists of the American Dental Education Association (ADEA, Table 2)¹¹⁾, and competency categories presented by the Korean Association of Dental Hygiene Professors (KADHP, Table 3)¹²⁾ were used in the areas of occupational, communication, clinical, community, and health promotion.

Based on the competency criterion, the competency

Table 1. Personal Information of Interview Participants

Part	Institution	N	Occupation
Clinic	C Oral health center for people with disability	1	Dentist
	C Oral health center for people with disability	1	Dental hygienist
	G Public health center	1	Dental hygienist
	S University Dental Hospital	1	Dentist
	S University Dental Hospital	1	Dental hygienist
	P Dental Hospital	1	Dentist
	K University Dental Hospital	1	Dentist
	Education	G University	1
G University		1	Dental hygienist
K University		1	Dentist
K University		1	Dentist
K University		1	Dental hygienist
P University		1	Dentist

Table 2. American Dental Education Association Competencies for Dental Hygienist¹¹⁾

Competency	Sub-competency
Core competencies	Ethics
	Critical thinking skills
	Comprehensive problem-solving
	Responsibility for professional actions
	Self-assessment skills
	Communication skills
	Providers for optimal patient care
Health promotion and disease prevention	Health promotion
	Promote health-related quality of life
	Disease prevention or health maintenance strategies
Community involvement	Health care system
	Community oral health service
	Patient's access to oral health service
	Community-based program
	Advocate
Patient/client care	Dental hygiene care
	Assessment
	Dental hygiene diagnosis
	Planning
	Implementation
Professional growth and development	Evaluation
	Professional goal
	Social network

Data from American Dental Education Association. (ADEA competencies for entry into the allied dental professions; 2011. p. 1-12)¹¹⁾.

embedded in the interview response was derived using the priori method, and it was confirmed whether the derived ability matched the ability determination corresponding to the respondent¹³⁾. Competencies were determined based on each criterion and were checked for participants who answered with uncertainty. Qualitative analysis was done based on the final determined competency.

Results

In this study, we conducted in-depth interviews with 13 specialists to derive the specific competencies that dental hygienists need in order to perform oral health services for the disabled. The results of deriving the core competencies as classified by ADEA and KADHP for the determination

Table 3. Korean Association of Dental Hygiene Professors Competencies for Dental Hygienist¹²⁾

Competency	Sub-competency
Professional conduct	Professional behavior
	Ethical decision-making
	Self-assessment skills
Ethical decision making	Lifelong learning
	Accumulate evidence
	Ethical decision making
Evidence based decision making and problem solving	Apply ethical principle
	Dental hygiene research
	Evidence based dental hygiene
Communication	Understanding psychological development
	Effective communication
	Dental hygiene care
	Assessment
	Dental hygiene diagnosis
Clinical practice	Planning
	Implementation
	Evaluation
	Anxiety and dental fear care
	Understanding dental radiography
Hospital administration	Perform tasks for effective dental service
	Patient management
	Utilize document
	Claim dental insurance
	Leadership
Community and health promotion	Community oral health service
	Planning community based program
	Evaluating community-based program

Adapted from Bae et al. (Implementation of assessment in a competency-based dental hygiene science education; 2014. p. 11-19)¹²⁾ with original copyright holder's permission.

of the ability of dental hygienists to require oral health for persons with disabilities were as follows (Table 4).

1. Professional conduct competency

The professional conduct competency of dental hygienists, devised by KADHP, consists of professional behavior, ethical decision-making, self-assessment skills, lifelong learning, and accumulate evidence.

Ethics, responsibility for professional actions, and critical thinking skills are required under the core competencies of ADEA's classification. Dental hygienist abilities needed

Table 4. Competencies of Dental Hygienists for Oral Care Service for People with Disability

	ADEA competencies for dental hygienist	KADHP competencies for dental hygienist
Professional conduct competency	Responsibility for professional actions Critical thinking skills	Professional behavior Lifelong learning Accumulate evidence
Communication competency	Communication skills	Understanding psychological development Effective communication
Clinical practice competency	Assessment	Assessment Anxiety and dental fear care Perform tasks for effective dental service Patient management

ADEA: American Dental Education Association, KADHP: Korean Association of Dental Hygiene Professors.

for oral health care for people with disabilities, especially in the detailed abilities to fulfill these social needs, were derived as follows:

“More effort and study are necessary during dental treatment for patients with disabilities.” (Dental hygienist 1)

“The current workforce in community health clinics or clinical facilities will not be able to perform tasks efficiently owing to inability to provide additional services for people with disabilities. Moreover, I think that dedicated dental hygienists must be given professional education for them to show competency and expertise in providing treatment.” (Dental hygienist 2)

Professional conduct within the practice required the competency to have professionalism and behavior in the dental practice. Therefore, specialized education is required as well as self-learning for professional roles.

“Additionally, treatment requires understanding of the social welfare system and its patients. It is possible to explain to patients the dental treatment and financial support for people with disabilities only when one has an understanding of current medical insurance system and the lower-income population.” (Dentist 3)

Emphasis was placed on understanding the social welfare system for persons with disabilities and the health insurance system. Based on this, a system-based health activity for support services that can support persons with disabilities is required.

2. Communication competency

The communication skills required of a dental hygienist are the skills for effective communication and interaction between the patient and the patient’s family, colleagues, supervisors, other health professionals, and various populations.

In the ADEA and KADHP classifications, communication ability was classified into core competency. The main derived capabilities from the in-depth interview analysis were as follows:

“One must be cautious at all times for possible emergencies, and more communication and help are necessary than for patients without disabilities.” (Dental hygienist 1)

“More personnel need to be recruited, but the resources from the medical facilities are limited. Further, dental hygienists are group of people that have a high level of emotional labor as they communicate directly with patients on a daily basis.” (Dental hygienist 2)

As mentioned above, in order to deal with sudden situations, such as emergencies due to the specialty of dental treatment for persons with disabilities, communication skills are a necessity and there must be constant communication with parents and persons with disabilities.

“It was difficult to identify the chief complaints during appointment calls for initial examination owing to difficulties communicating with patients with disabilities, which, most of the time, led to conversation with their caregivers instead. Chief complaints were assumed solely based on

caregivers' comments, such as 'He frowns when eating,' 'He avoids brushing his teeth,' and 'His mouth is full of blood after waking up from sleep.' We were required to provide explanations for every possible treatment option and the consequent expenses." (Dental hygienist 3)

"Open-mindedness and positive attitude with active listening skills that enable patients to feel comfortable and open up are essential. Respecting patients' right to self-determination can bring forth good results; many patients tend to have a victim mentality." (Dental hygienist 5)

"Anticoagulants and antiplatelet agents have different mechanisms and the use and history of these medications are to be discussed with patients upon consultation with dental hygienists. Dental hygienists should be able to deliver accurately the relevant information not only from patients to dentist but also among medical staff themselves." (Dentist 1)

"Dental hygienists who provide care for patients with disabilities must have a basic understanding of the disabilities and communication skills." (Dentist 3)

The information mainly obtained by the dental hygienist can greatly influence the setting of the correct direction of dental care by the dentist when performing dental treatments for the disabled. In this process, the role of inter-professional communication is emphasized in addition to inter-participants communication between patients and dental staff. In most cases, information about important drugs must be obtained at the time of dental treatment. Therefore, a communication ability to obtain prior information of the subject is required.

3. Clinical practice competency

According to the KADHP classification, of dental hygienists in the clinical field, the abilities most frequently mentioned in the in-depth interviews are divided into clinical dental hygiene and clinical practice. According to the classification of ADEA, the abilities correspond to patient/client care competency. From the in-depth interviews, the following were derived:

"A quick response to emergency may be difficult at

general dental clinic, unlike at a hospital. It will be more efficient when services are provided with continuous dental management as well as education on oral health and preventive measures, such as professional toothbrushing technique, also known as the Watanabe or tooth-pick method, oral massage to help with saliva secretion, rather than therapy-centered medical services, such as scaling." (Dental hygienist 1)

The KADHP classification criteria for clinical dental hygiene and clinical dental competency detail standards require the ability to have basic medical and dental clinical knowledge and to have used this in the management process and to be proactive in the role as dental hygienists. The role for ongoing management of oral health education were derived to be the required detailed skills.

"One cannot tell a patient's behavior and attitude based on type of disability written on the welfare card upon initial entry. Therefore, an accurate medical history is important." (Dental hygienist 2)

"Dental hygienists cannot determine the presence of dental caries or periodontal diseases; however, they can assess general oral condition (slight, moderate, or severe) regarding the signs and symptoms (bleeding, gingival color, calculus, probing depth) of oral disease and contribute to determining the necessity of medical attention. This will play an important role in determining the type, amount, and duration of oral medical services." (Dental hygienist 5)

The clinical competency required of a dental hygienist, as well as the response of an expert, was not an accurate determination of the disease, but an ability to determine the patient's treatment needs for virtually-delivered oral care services. In the clinical field, competency is required for behavioral regulation and understanding of drugs associated with systemic diseases.

"It is necessary to understand the behavior and traits of patients with disabilities based on experience interacting with them. For example, aggressive patients cannot be controlled and may offend health care professionals."

(Dental hygienist 1)

“Dental warnings can only be given when accompanied by understanding of the use of medications for hereditary diseases or medical history. Medications will be easily searched online; yet, dental precautions tend to be overlooked in the administration of these medications tend.”

(Dental hygienist 1)

“People with disabilities include medically complex patients. Patients with disabilities who are receiving renal dialysis, under treatment for cancer, or taking long-term medications, like thrombolytic agents or bisphosphonates, visit dental clinics. It is important that they are educated regarding the warnings and precautions at the time of dental treatment.” (Dentist 2)

“Behavioral control is necessary for the technical parts of dental treatment. If behavior is not controlled, then even an initial examination cannot be carried out.” (Dentist 3)

“Dental offices patients with disabilities are primarily operated by dental hygienists in most settings internationally. The role of the dentist is focused heavily on diagnosing and creating treatment plans, whereas the dental hygienist actively monitors and evaluates the risk and feedback of the treatment. In my opinion, these roles are appropriate for both professionals.” (Dentist 2)

“In Japan, check-up, education, feedback, and preventive care (professional mechanical toothcleaning, scaling) are managed by two dental hygienists after the initial treatment planning and monitoring. This role of explaining accurately and providing precise care is also necessary for Korean dental hygienists.” (Dentist 4)

“Independent dental treatment for persons with disabilities is currently restricted to dental hygienists. There is a need to reduce the role of hygienists in pre-evaluation screening and increase their role in active patient management. It is also necessary to understand and differentiate the needs of persons with disabilities. Additionally, patient education on proper dental hygiene, diet, and toothbrush maintenance should be roles the hygienist be expanded to.” (Dentist 5)

“Dental treatment for persons with disabilities has traditionally been a more compassion-driven task but now needs a shift toward a scientific and specific take based on dentistry and medicine.” (Dental hygienist 2)

Experts noted that dental hygienists continued to play roles in the oral care of persons with disabilities, including management, understanding of risk factors, and dietary adjustments, and that specialized education is needed.

It was considered difficult to introduce roles such as screening inspections and necessary checks in the absence of legal authority in the context of the current ideal business operation. Excluding this, there is a need for more vigorous activities such as continuous oral health management and education.

Discussion

In dental treatment for the disabled, dentists are required to play a specialized role in treatment, and dental hygienists are required to play roles in education and prevention for incremental dental care¹⁴⁾. For this purpose, there is a need for the establishment of a specialized curriculum and specialized human resources, and the current situation is that there is a large shortage of specialized curriculum and dental staff¹⁵⁾.

Dental hygienist education aims to foster oral health professionals with a focus on oral health education and preventive dental treatment, and it is defined by the oral health educator that educates for oral hygiene improvement and oral hygiene management¹⁶⁾. However, in clinical practice, there are many barriers to performing actual legal work and roles learned in educational curriculums, which has resulted in gaps in dental work¹⁷⁾. In addition, the job turnover rate is increasing due to a lack of needs for duties, and the degree of job satisfaction is low¹⁸⁾. The number of dental hygienists in charge of the health promotion program is increasing, mainly in the local public health centers, but the status of completion of job-related conservative education for dental hygienists is still low¹⁹⁾. Oral health care approaches, especially for the vulnerable and people with a disability, require specialized education, which must consist of courses that can develop the skills needed so that dental hygienists can promote their competency²⁰⁾.

The results of this study show that the expected competency to provide oral health services for persons with disabilities were devised in the three areas of professional

conduct, communication, and clinical practice competency, which were presented by KADHP; and ADEA's classifications of competency, ethics, responsibility for professional actions, and critical thinking skills which were required. In particular, the competency to communicate with clinical practice using expertise has significantly emerged.

First, as a result of deriving competency in the field of professional conduct, the competency to have professionalism and behavior in dental practice was required. According to previous studies, measures to activate health and welfare cooperative services include the establishment of a cooperative system with related councils, the promotion of understanding and professional education between professionals, the evaluation of cooperative services, and the construction of a compensation system²¹⁾. It was reported that it is necessary to prepare a multifaceted plan to perform a specialized occupation effectively for oral care services for the disabled.

Second, in order to deal with unexpected situations, such as emergencies due to the distinct characteristics of dental treatment for persons with disabilities, the need for communication skills that requires constant dialogue with parents and persons with disabilities was derived²²⁾. Persons with disabilities who have a lack of expressiveness and communication skills due to cognitive limitations have difficulty communicating with dental staff, making it difficult to ascertain major symptoms and discomfort²³⁾. Also, when communication is difficult due to disabilities, it is difficult to understand the exact health condition of a person, which can lead to misdiagnosis and inappropriate follow-ups²⁴⁾. Dental hygienists come as the first point of contact for the disabled, having to communicate with the patient to get accurate information, with all the possibilities in mind. Inter-participant communication has a great impact on good disease prognosis in patient-to-healthcare staff communication as it increases the capacity for self-management of treatment by accurately communicating the patient's course of treatment and self-information²⁵⁾. The importance of these shared communications is critical to the need for more communication, such as in relation to lifestyle changes and mid- to long-term management, which is very important for disabled dental care patients

with systemic diseases. Nevertheless, there is a large shortage of sharing and decision-making at the actual dental clinic for persons with disabilities²⁶⁾.

Third, the dental hygienists' roles of preventive dental care and continuous management of oral health education were derived as required detailed abilities. This is the competency required of dental hygienists in the field of public health, and it requires systematic training and clear practice roles²⁷⁾. Knowing the exact medical history and status of patients and providing them to dentists plays a very important role in the prognosis of patients with systemic diseases, such as disabled people²⁸⁾. In the clinical field, competency was required for behavioral regulation and understanding of drugs associated with systemic diseases.

Looking at the role of dental hygienists in the field of dental care for the disabled, a professional dental hygienist system has been introduced in Japan, which is provided based on the hygienist's education and training history, including professional education taken, and is undertaken at the Japanese Society for Disability and Oral Health. Dental hygienists play important roles such as lifestyle improvement, swallowing rehabilitation, home care guidance, oral health management, management of systemic diseases, and cooperation with medical departments in oral health care for the disabled (Corporation of Japan Dental Hygienists' Association, 2019). According to a study by Bae et al.¹²⁾, the main role of a dental hygienist is to ensure that professional responsibilities of dental hygienists as a healthcare professional and professionals contributing to the realization of a healthy society have a social impact. It was reported that it is very important to define and realize what capabilities must be possessed. In developed countries, it was reported that dental hygienists are already playing expert roles, such as continuous oral health management and oral health education, in the oral health services for persons with disabilities.

In this study, it is significant that the qualitative method was used to derive the competency of dental hygienists, who are difficult to measure in quantitative evaluation studies. Due to the limited sample size and the lack of qualitative research methods, the representativeness of the sample was unverifiable. The study was conducted with

several dental hygiene educators and specialized medical staff for persons with disabilities. The findings of the study have limited generalization to oral health and dental hygiene professionals for all persons with disabilities. Subsequent research is needed to expand the scope of this research, and a diversified approach is needed to evaluate the effects of the expansion of the pilot project and assess dental hygiene skills.

At present, oral health centers for people with disabilities are currently being installed and operated in Korea, and centers will be expanded to 14 areas nationwide. These centers will serve as a central authority for dental care and public health services for people with disabilities and patients²⁹⁾. While oral health services for the vulnerable class in the community are increasing and expanding with welfare-centered policies, there is a large shortage of specialized oral health personnel compared to oral health care institutions for persons with disabilities³⁰⁾. In order to activate oral health care for people with disabilities, it is necessary for dental hygienists to fulfill their appropriate roles, and for this purpose, competency-based curriculum restructuring is indispensable. A social safety net for improving the oral health of people with disabilities can be secured by improving the required skills-based education system of the derived dental hygienists and strengthening the related infrastructure.

Notes

Conflict of interest

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

Ethical approval

This study was approved by the institutional review board of Seoul National University Clinical Research Ethics Committee (S-D20180023).

Author contributions

Conceptualization: Jae-Young Lee. Data acquisition: Jae-Young Lee. Formal analysis: Jae-Young Lee. Funding: Young-Jae Kim, Bo-Hyoung Jin. Supervision: Young-Jae Kim, Bo-Hyoung Jin. Writing-original draft: Jae-Young

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