

Short Communication: Links between Dental Hygiene Curriculum and Dental Hygiene Task Analysis

Chae-Eun Park¹, Jin-Gyeong Yoo¹, Su-Hyun Lee¹, Yoon-Ha Lee¹, Ji-Yeon Lee¹, Mun-Jeong Choi¹, and Soo-Jeong Hwang^{2,†}

¹Department of Dental Hygiene, College of Medical Science, Konyang University, Daejeon 35365, ²Department of Dentistry, Doosan Health Promotion Center, Daejeon 35230, Korea

Background: The problem with current dental hygienist education is that it operates as an education system based on the national examination rather than on a practical basis; thus, graduates have difficulties in practice after obtaining their license. This study aimed to propose a job-oriented curriculum by analyzing the links between the task analysis of Korean dental hygienists and dental hygiene learning goals.

Methods: This study performed a relationship analysis based on a second job analysis study of dental hygienists conducted by the Korea Health Personnel Licensing Examination Institute and the learning goals of the Korean Dental Hygiene Faculty Association.

Results: Based on the links between the task and learning goals of the dental hygienist, they were classified into six types: 1) tasks listed in the license exam and learning goal, 2) tasks not listed in the license exam but listed in learning goals, 3) tasks not listed in learning goals, 4) learning goals not related to tasks, 5) learning goals listed in a few tasks, and 6) tasks related to several learning goals. The results showed that most of them correspond to the 5th classification, followed by the 3rd and 4th categories, which are mostly basic science learning goals. Tasks without learning goals are not included in the curriculum; thus, the curriculum needs to be supplemented. The overlapping learning goals of several subjects for one job skill must be reduced in job-oriented education.

Conclusion: We suggest that the dental hygiene curriculum be developed based on task analysis and reflected in the national dental hygienist exam. The clinical practice performance of dental hygienists will take further leap forward through task-oriented education.

Key Words: Curriculum, Dental hygienists, Task performance and analysis

Introduction

The topic of the Korean dental hygiene curriculum over the past 20 years has been the establishment of a dental hygiene course¹. In 2000, it was used as the name of a subject, similar to the curriculum of dental colleges. Dental hygiene professors are very highly aware of the dental hygiene integrated curriculum in recent years², and are trying to use the name of the integrated curriculum¹. The Korean Dental Hygienists' National Licensing Examination (KDHNLE) is broadly classified into medical-

related laws and dental hygiene. Dental hygiene in the KDHNLE is divided into basic dental hygiene, dental hygiene treatment, and clinical dental hygiene, using the name of the integrated curriculum. However, KDHNLE also includes oral anatomy, dental morphology, oral histology, oral pathology, oral physiology, preventive dentistry, dental scaling, public oral health, oral health education, oral and maxillofacial surgery, prosthetics, conservative dentistry, pediatric dentistry, periodontology, orthodontics, dental materials, dental radiology, and oral microbiology³. The same subjects were composed in sub-categories as

Received: May 18, 2022, Revised: June 1, 2022, Accepted: June 7, 2022

eISSN 2233-7679

[†]Correspondence to: Soo-Jeong Hwang, <https://orcid.org/0000-0003-4725-1512>

Department of Dentistry, Doosan Health Promotion Center, 60, Daedeok-daero 175beon-gil, Seo-gu, Daejeon 35230, Korea
Tel: +82-42-488-4671, Fax: +82-42-488-4676, E-mail: denthwang@daum.net

Copyright © The Korean Society of Dental Hygiene Science.

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

before the 2000s, the number of questions for each subject was fixed, and the questions were not asked as integrated subjects.

In addition, the problem of the current dental hygienist education is that it is difficult for graduates to adapt to clinical practice after obtaining a license due to the lack of connection between the KDHNLE-based education system and dental hygienist practice⁴⁾. Researchers insist the need to find a way to effectively educate real work rather than theoretical education⁵⁾. Therefore, for a dental hygienist to work effectively in the field after graduating from the Department of Dental Hygiene, the job skills of the dental hygienist and learning goals of the dental hygiene curriculum must be linked. This study intends to report the link between the job analysis of dental hygienists conducted by the Korea Health Personnel Licensing Examination Institute⁶⁾ and the dental hygiene learning goals of the Korean Dental Hygiene Faculty Association⁷⁾.

Methods

1. Data and classification

This study was conducted by linking the terms of each subject's learning goals⁷⁾ and dental hygienist job description⁶⁾, and then evaluating the degree of concordance of the contents. The learning goals are divided into items A and B. Item A is more important than item B and is a learning goal that is prioritized as a question in KDHNLE. In this study, six types, based on the connection between the job and learning goals, were classified through discussion with the researchers: 1) tasks listed in the license exam and learning goal, 2) tasks not listed in the license exam but listed in learning goals, 3) tasks not listed in learning goals, 4) learning goals not related to tasks, 5) learning goals listed in a few tasks, and 6) tasks related to several learning goals.

Based on the above classification criteria, each researcher assigned the learning goals of 18 subjects so that the tasks and learning goals were linked. Secondary classification was performed in the same manner as the primary classification by another researcher. After all the researchers checked the results of the primary and secondary classifications, the final classification was discussed if the

primary and secondary classifications did not match or were ambiguous, or if other researchers did not agree with the results.

Results and Discussion

This study analyzed the relationship between the educational goals based and the job description of a dental hygienist, and the results were as follows.

First, the task items with learning goal A were as follows: obtaining dental history, understanding head and neck examination methods, understanding intraoral and extraoral films, taking occlusal X-ray film, preparing for extraoral X-ray film, taking cephalometry, taking pictures of patients, applying orthodontic elastics, and applying topical anesthesia. These items have clear links between tasks, learning goals, and KDHNLE questions.

Second, the task items with only learning goal B were as follows: performing professional Watanabe tooth cleaning, management of swallowing disorder, management of multiple dental caries, application of periodontal pack, examination of pulp vitality, selection of prosthesis tooth color, interdental separation, preparation for mini-screw surgery, stitch out and suturing, preparation for implant surgery, oral hygiene management for implant patients, dealing with dental emergencies, and implementation of oral health projects. Although education for these tasks is provided in dental hygienist training courses, it is rarely questioned in KDHNLE. Therefore, it is necessary to consider this question in KDHNLE after determining the importance of the task.

Third, the task items that did not have a learning goal corresponding to the dental hygienist job skills were as follows: observing each organ system, understanding oral imaging devices, managing clinical uniform, using chemical disinfectants, managing medical waste, head and neck physical therapy, using head and neck warm pack, using head and neck ultrasound device, exercise therapy of temporomandibular disorder, managing bruxism, managing snoring, understanding oral and facial pain, handling laser equipment, managing periodontal surgery patients, preparing for opening impacted tooth, managing orthodontic pliers, preparing bone augmentation for implant, preparing implant

prosthesis, managing implant equipment, intramuscular injection, national health insurance claiming, facility maintenance, dental equipment maintenance, managing prosthesis from dental technicians, managing consumables, managing documents, patient counseling, promoting dental clinics, managing staff, acquiring new technologies, and engaging in social contribution activities. The learning goals of these tasks should be revised and supplemented after understanding the importance and execution level of the tasks and judging how they affect oral health promotion.

Fourth, the learning goals that do not have the task in dental hygienists' job description were as follows: "You can explain the specification mechanism of dental materials"; "You can explain the biopsy and the manufacturing process"; "Epidemiological types of diseases can be classified"; "The types and number of cranial bones can be listed"; and so on. Since most learning goals are related to basic subjects such as dental materials, pathology, and anatomy, they do not directly affect the job performance of dental hygienists. Nevertheless, they may be necessary for cultivating the basic knowledge of dental hygienists; thus, it is necessary to revise and supplement the learning goals according to the connection with the tasks of dental hygienists through discussion with educators related to basic science.

Fifth, the learning goals listed repeatedly in a few tasks were as follows: periodontal examination, collection of population information, collection of community information, environmental collection of condition information, figuring out teeth and periodontal problems, establishment of treatment plan according to medical and dental history, establishment of treatment plan according to intraoral and extraoral examination, analysis of community oral health data, preparation of community oral health plan, establishment of tap water fluoridation plan, establishment of mothers and children oral health plan, establishment of student oral health plan, establishment of adult oral health plan, establishment of elderly oral health plan, infection control of dental equipment, sterilization, reading radiographs, examining dental plaque, examining oral microbes, managing oral hygiene for each subject, calculus removal, root planning, using manual scalers, managing dental implant, managing compromised patients' oral hygiene,

preparing primary tooth extraction, planning an oral health project, implementation of a tap water fluoridation, implementation of mother and child oral health program, implementation of student oral health program, and implementation of oral health program for the disabled. As these are important learning goals for various tasks, they should be emphasized in the curriculum.

Sixth, the task items that have the learning goals of several subjects were as follows: applying charting symbols, examining oral hard tissue, establishing an oral health plan for the elderly, examining dental plaque, managing oral hygiene for each subject, managing hypersensitivity, measuring and treating bad breath, assisting tooth extraction, and implementing oral health programs for the elderly. Repeated learning in multiple subjects in the same job may be inefficient in the curriculum. Therefore, it seems to be an item that should be reviewed first when the curriculum is organized based on tasks.

Recently, the government has been trying to nurture core human resources and realize a competency-oriented curriculum for social development. The dental hygiene faculty also emphasizes a job-oriented curriculum so that dental hygienists can perform clinical tasks more effectively⁸⁾. Based on official data published by dental hygienists, this study attempted to link and classify dental hygiene curriculum and dental hygiene tasks. Based on this, we suggest revision plans for competency-oriented curriculum. If a job-oriented dental hygiene curriculum is developed and reflected in KDHNLE, the clinical practice performance of dental hygienists will take further leap forward.

Notes

Conflict of interest

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

Author contributions

Conceptualization: Chae-Eun Park, Jin-Gyeong Yoo, Su-Hyun Lee, Yoon-Ha Lee, Ji-Yeon Lee, Mun-Jeong Choi, and Soo-Jeong Hwang. Data acquisition: Chae-Eun Park, Jin-Gyeong Yoo, Su-Hyun Lee, Yoon-Ha Lee, Ji-Yeon Lee, Mun-Jeong Choi, and Soo-Jeong Hwang.

Supervision: Yoon-Ha Lee and Soo-Jeong Hwang.
 Writing-original draft: Chae-Eun Park, Jin-Gyeong Yoo, Su-Hyun Lee, Yoon-Ha Lee, Ji-Yeon Lee, Mun-Jeong Choi, and Soo-Jeong Hwang. Writing-review & editing: Soo-Jeong Hwang.

ORCID

Chae-Eun Park, <https://orcid.org/0000-0003-1373-1542>
 Jin-Gyeong Yoo, <https://orcid.org/0000-0002-5118-3527>
 Su-Hyun Lee, <https://orcid.org/0000-0002-4859-8537>
 Yoon-Ha Lee, <https://orcid.org/0000-0002-1892-3095>
 Ji-Yeon Lee, <https://orcid.org/0000-0003-1470-2161>
 Mun-Jeong Choi, <https://orcid.org/0000-0002-0233-478X>
 Soo-Jeong Hwang, <https://orcid.org/0000-0003-4725-1512>

References

1. Lee SY, Hwang SJ: 4-year course curriculum of dental hygiene in Korea. *J Korean Dent Hyg Sci* 2: 41-50, 2019.
2. Moon SE, Kim YJ, Kim SY, Cho HE, Lee BR: Instructors' needs of integrated curriculum in dental hygiene practice. *J Korean Soc Dent Hyg* 16: 799-805, 2016. <https://doi.org/10.13065/jksdh.2016.16.05.799>
3. Korea Health Personnel Licensing Examination Institute: Announcement of the range of questions for the dental hygienist national exam. Retrieved January 12, 2022, from: https://www.kuksiwon.or.kr/notice/brd/m_51/view.do?seq=2429&srchFr=&srchTo=&srchWord=&srchTp=&itm_seq_1=2&itm_seq_2=0&multi_itm_seq=0&company_cd=&company_nm=.
4. Kim EG, Lim SH, Kwon MY, Choi YY, Han JH: Analysis of tasks and education needs for dental hygienist for development of dental hygiene curriculum. *J Dent Hyg Sci* 14: 35-42, 2014.
5. Shin SJ, Kim MJ, Yang JY, Yu JS, Jeoung AY, Shin MS: Study of clinical practice standardization in dental hygiene. *J Dent Hyg Sci* 17: 1-11, 2017. <https://doi.org/10.17135/jdhs.2017.17.1.1>
6. Korea Health Personnel Licensing Examination Institute: Dental hygienist job analysis. 2nd ed. Korea Health Personnel Licensing Examination Institute, Seoul, 2012.
7. Korea Dental Hygienist Education Council; Korea Dental Hygiene Faculty Council: Department of dental hygiene learning objectives. 5th ed. Komoonsa, Seoul, 2017.
8. Lim MH, Yoo JS, Lee SM, Han JY, Won YS, Ahn SY: Clinical dental hygiene curriculum developed on the basis of dental hygienist job description. *J Korean Acad Dent Adm* 4: 55-66, 2016. <https://doi.org/10.22671/JKADA.2016.4.1.55>