



Possibility of a Standardized System for Task-Related Hierarchical Positions of Dental Hygienists

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Background: Despite the demand for greater competence of dental hygienists in recent times, and the consequent standardization of systems in the organizations, there is a lack of a proper system for hierarchical positions of dental hygienists. The aim of this study was to identify the tasks performed by Korean dental hygienists in various work settings and hierarchical positions to suggest a standardized system for task-related hierarchical positions.

Methods: A survey was conducted by sending questionnaires to 966 dental hygienists, and responses from 757 participants were included in the final analysis. The survey comprised questions regarding participants' general characteristics, tasks, current positions, and the internal policies or standards of the respective organizations to define these positions. The participants' positions were analyzed as frequency and cross-sectional analysis with respect to their general characteristics, their place in the organizational charts, the size of their workplaces, and differences in the tasks performed.

Results: Data showed that 82.6% of the hospitals and clinics in Korea have organizational systems to determine the positions, and there was a significant difference in the systems according to the size of the health facility ($p < 0.05$). The standards or policies used to define positions within general or university hospitals were determined by internal regulations or bylaws, whereas work experience was the major determinant of positions in smaller dental hospitals or clinics. The main tasks performed by dental hygienists in Korea were dental assistance (81.2%), routine dental hygiene tasks (53.4%), and administrative tasks, such as reception and billing (46.1%).

Conclusion: Most dental hygienists in Korea are actively involved in dental assistance. Therefore, their specific tasks and responsibilities should be standardized more effectively. The data obtained from this study can be used to establish a standardized position system.

Key Words: Dental hygienists, Job description, Job satisfaction, Task performance

Introduction

Systematic organizational management is important because each individual's role is specialized and specified, and the role of all members determines the quality of medical services in the medical institution. For efficient patient care, hospital staff comprise health and medical personnel in addition to support personnel, and work is divided according to certain rules of conduct¹. In addition, the hospital organization has excessive job value of its

members compared to the general field, and its hierarchy is clearly established².

In recent times, the expected roles and responsibilities of dental hygienists have been increasing with the trend of expansion and specialization of dental institutions^{3,4}. Dental hygienists account for about 60% of all professionals employed by dental hospitals and clinics, according to these trends⁵. Traditionally, their main tasks involve providing clinical treatment for prevention of oral disease, oral health instructions, and dental assistance. More

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recently, non-clinical roles, such as participation in the overall management as well as supervision and quality control of the dental care being provided in the facility have been emphasized along with the traditional role⁶⁾. As the number and roles of dental hygienists are increasing⁷⁾, dental institutions need to have a systematic organizational structure to enable them to perform their duties adequately and to fulfill the role of providing high-quality dental services⁸⁾. Currently, dental hygienists do not have standardized designation, and each dental institution uses different designations⁹⁾. The absence of a standardized work system can make it difficult to assign appropriate tasks and provide accountability in clinical fields. This can cause conflicts among members of the organization in the clinical field with respect to various tasks and affect the dental institution's revenue in the long term¹⁰⁾. However, few studies have tried to systematically standardize the dental hygienist's position according to their tasks. If the task-related positions are specified and adequately compensated according to the dental hygienists' hierarchical level, it will lead to an overall improvement in job competency and satisfaction level. Moreover, a firm belief in the role of dental hygienists may enhance the competitiveness of the organization and minimize conflicts among its members, thereby ensuring the desired effectiveness of the organization.

Considering this background, the aim of this study was to understand the tasks performed by Korean dental hygienists in various work settings and hierarchal positions, to suggest a standardized system for tasks-related positions.

Materials and Methods

This study was based on the results of a research¹¹⁾ conducted by the Korea Dental Hygienists Association (KDHA) in 2015, titled "Study on dental hygienist clinical organizational structure standardization," which investigated the specifications on the hierarchal positions of dental hygienists', with the ultimate goal of standardizing the roles and responsibilities of dental hygienists in Korea.

1. Participants

The participants of this study were clinical dental

hygienists currently employed at dental healthcare facilities in Korea. A total of 966 dental hygienists working at 47 dental institutions or dental clinics nationwide—as well as dental hygienists attending academic conferences held by the KDHA—were selected for the survey.

2. Questionnaires

The survey questionnaire was sent via mail or handed directly to each participant in person. Although the items in the survey questionnaire were selected based on previous studies and preliminary interviews, the final structure and construction of the questionnaire was confirmed by expert panels. The survey was conducted between January 12 and January 30, 2015.

Participants who expressed their willingness to participate, received a 15-minute-long questionnaire. For managers of dental hygienists, the contents included type of the hospital, number of employees, average number of patients per dentist per day, average number of patients for a dental hygienist per day, number of unit chairs in the hospital, present hierarchal system for dental hygienists, current tasks performed by dental hygienists. For general dental hygienists, the questionnaire required them to specify general characteristics (sex, age, working period, working area), size of the institution, number of dentists, number of dental hygienists, primary task, hierarchal position, salary, present welfare status, job satisfaction, necessity for standardization of the hierarchal system, job stress.

Among the survey questionnaires that were returned, a total of 757 sets were analyzed after eliminating 209 sets with errors. For the purpose of this study, the general characteristics of the participants included were sex, age, types of dental institution, and work experience. The participants' age range was 21 ~ 57 years, and they were grouped as follows: 21 ~ 25, 26 ~ 30, 31 ~ 35, 36 ~ 40 years of age, and those aged 40 or above. Work experience ranged from 1 ~ 38 years and was divided into quartiles: 1 ~ 3, 4 ~ 6, 7 ~ 10, and 11 years or more. Dental institution types were categorized as general hospital, university dental hospital, dental hospital, or dental clinic to suggest the organizational system and standards for positional advancement according to the dental hygienists' workplace.

To categorize the dental hygienist's tasks, team members and managers from two university hospitals and two dental hospitals were interviewed. All tasks routinely performed by the dental hygienists in current dental care facilities in Korea were categorized into nine areas¹¹⁾.

The nine general areas of standard work performed by dental hygienists comprised routine dental hygiene, unique tasks included scaling, preventive care, and regular check-ups. Dental assistance included chairside duties, infection control, and management of dental prosthesis. Reception and billing tasks included all the typical reception duties, such as appointment management, receiving calls, and handling client payments. Patient education and consultation included conducting oral health-related instruction sessions for patients, and outlining the options and details of dental plans. Employee education and medical quality assurance tasks included training new staff members and dental hygiene students, as well as regular quality assurance activities. The office administration and human resource tasks included managing office documents and records, controlling fixed assets, managing basic materials and dental care equipment, and personnel administration tasks. Safety management comprised clinical, patient, and employee safety. Management of the dental hospital or clinic comprised general managerial tasks related to the workplace, marketing, and strategic development of related services. Other tasks included sterilization of equipment and sanitary activities. Although multiple answers were allowed for questions regarding performed tasks, the two most frequently selected tasks were defined as the "main" tasks.

If the participant's workplace had an organization system with a hierarchy of more than two levels, the individual's position was categorized as either a team manager or a team member. All higher positions, such as chief, team leader, section leader, and head of the department were categorized as team managers. If the participant's workplace had no defined organizational chart, the individual was categorized as a team member.

3. Statistical analysis

If no response was provided by a participant to an item in the survey, that questionnaire was excluded from the

analysis. The following were summarized as frequencies and percentages: hierarchical positions of the dental hygienists with respect to the participants' general characteristics, organizational structure according to the dental institution types, tasks with respect to the position, and the participants' opinions about the definition of the positions at their place of work. The differences in performed tasks with respect to the defined positions within the dental institutions were analyzed using the chi-square test and Fisher's exact test. Statistical analysis was performed using IBM SPSS ver 20.0 (IBM Corp., Armonk, NY, USA) with a level of significance set at 0.05.

Results

1. Current positions with respect to the participants' general characteristics

Of the participating dental hygienists, 25.9% were team managers and 74.1% identified themselves as team members. A significant difference was detected in the distribution of team leaders and members according to their age, the size of their workplace, and their work experience ($p < 0.05$). Individuals in the 36~40 years age group showed the largest proportion of those in higher managerial roles as

Table 1. Positions of Dental Hygienists according to Their General Characteristics (n=757)

Category	Variable	Manager	Member
Sex	Female	195 (25.9)	557 (74.1)
	Male	1 (20.0)	4 (80.0)
Age (y)	21~25	10 (4.0)	238 (96.0)
	26~30	82 (30.5)	187 (69.5)
	31~35	37 (30.3)	85 (69.7)
	36~40	35 (58.3)	25 (41.7)
	≥40	31 (55.4)	25 (44.6)
Types of dental institution	General hospital	29 (20.3)	114 (79.7)
	University dental hospital	31 (14.5)	183 (85.5)
	Dental hospital	65 (28.3)	165 (71.7)
	Dental clinic	71 (42.3)	97 (57.7)
Work experience (y)	1~3	6 (2.8)	209 (97.2)
	4~6	29 (19.3)	121 (80.7)
	7~10	67 (33.2)	135 (66.8)
	≥11	91 (54.5)	76 (45.5)
	Total	196 (25.9)	561 (74.1)

Values are presented by number (%).

team leaders (58.3%). Individuals in the 21 ~ 25 years age group were predominantly team members (95.9%). With respect to the reported types of dental institution, the distribution of individuals in higher positions was 42.3% in dental clinics, 28.3% in dental hospitals, 20.3% in general hospitals, and 14.5% in university dental hospitals. In terms of work experience, individuals with an experience of 11 or more years comprised a significantly number of those in higher-level positions, with 54.5% of them currently working as team leaders (Table 1).

2. Organization systems according to the size of the dental institutions

It was found that 82.6% of the respondents reported that their workplaces had some type of organizational system for their employees, and a significant difference was seen in terms of the types of dental institution ($p < 0.05$). Of the larger work settings, 90.1% of the university dental

hospitals had organizational systems, and 74.8% of the general hospitals also admitted to having systems to manage their human resources. The most predominant standards and internal policies for defining positions within their hierarchical systems were bylaws in general hospitals (48.4%) and university dental hospitals (44.6%), whereas work experience was the predominant factor in determining positional advancement for individuals working at dental hospitals (50.6%) and dental clinics (46.7%) (Table 2).

3. Performed tasks and main tasks of the dental hygienists by hierarchal position

Regardless of the types of dental institution, most dental hygienists in Korea were responsible for dental assistance (94.7%), patient education and consultation (94.0%), and routine dental hygiene tasks (53.4%) (Fig. 1). To analyze the data by workplace size, we grouped the general and university hospitals together, whereas smaller dental

Table 2. Organization Systems and Standards for Positional Advancement with Respect to the Types of Dental Institution

Category	Variable	General hospital	University dental hospital	Dental hospital	Dental clinic	Total	p ^a
Organization system	Yes	107 (74.8)	191 (90.1)	195 (85.5)	133 (80.1)	626 (82.6)	< 0.001
	No	36 (25.2)	21 (9.9)	33 (14.5)	33 (19.9)	123 (16.4)	
Position advancement standards	Work experience	28 (30.1)	52 (29.7)	89 (50.6)	57 (46.7)	226 (39.9)	< 0.001
	Contents	3 (3.2)	10 (5.7)	11 (6.3)	13 (10.7)	37 (6.5)	
	Ability	13 (14.0)	28 (16.0)	24 (13.6)	27 (22.1)	92 (16.3)	
	Bylaw	45 (48.4)	78 (44.6)	51 (29.0)	23 (18.9)	197 (34.8)	
	Others	4 (4.3)	7 (4.0)	1 (0.6)	2 (1.6)	14 (2.5)	

Values are presented by number (%).

^aBy chi-square test.

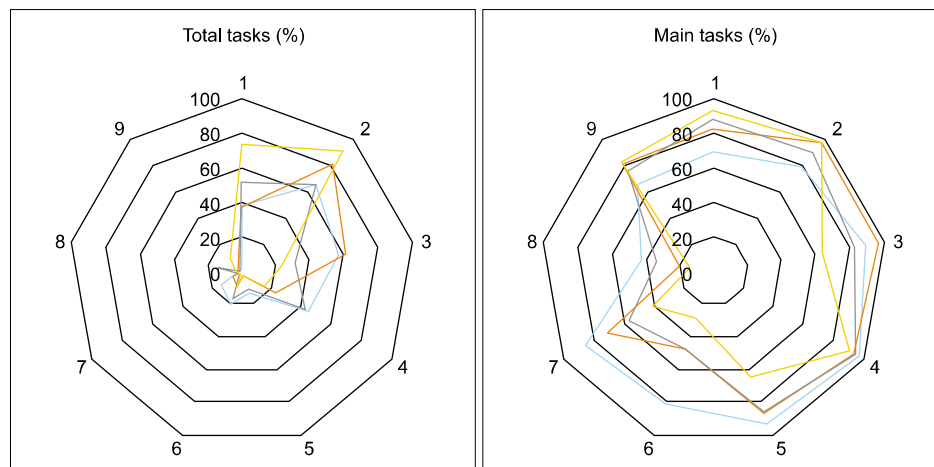


Fig. 1. Performed tasks and main tasks according to position. 1: routine dental hygiene tasks, 2: dental assistance, 3: reception and billing, 4: patient education and consultation, 5: employee education and medical quality assurance, 6: office administration or human resource tasks, 7: safety management, 8: dental hospital/clinic management, 9: other tasks. The blue line is manager and the orange line is member in general or university hospital. The gray line is manager and the yellow line is member in dental hospital or dental clinic.

hospitals and clinics were placed together in another group. When analyzing the main tasks performed by hierarchical position, significant differences were detected regardless of the workplace size in terms of dental assistance, patient education and consultation, employee education and medical quality assurance tasks ($p < 0.05$). Among the dental hygienists who worked specifically at dental hospitals or clinics, significant differences were also detected according to their hierarchical positions in the areas of routine dental hygiene tasks, reception and billing duties, office administration or human resources tasks, and other routine tasks ($p < 0.05$) (Table 3).

Discussion

This study intended to propose a standardized hierarchical system based on the work responsibilities of Korean dental hygienists and the status of their job position.

The roles of dental hygienists in Korea according to dental institution types, work experience, and the individual's position are presented in Tables 1, 3. Findings from the 2015 KDHA study showed that in 34 dental healthcare facilities nationwide, positions of dental hygienists ranged from one hierarchical level to as many as six, whereas 67.7% of these institutions had more than two levels¹¹⁾.

The predominant standards for advancement within these organization systems are codified in the bylaws in

general hospitals (48.4%) and university dental hospitals (44.6%). In contrast, work experience was the predominant factor in determining hierarchical advancement for individuals working at dental hospitals (50.6%) and dental clinics (46.7%); these indicate a significant difference in the possibilities of career advancement with respect to the types of dental institution (Table 2). This discrepancy is at least partly due to the fact that relatively large workplaces, such as general or university dental hospitals, are often associated with more diverse professional populations including not only dentists and dental hygienists, but also other healthcare providers. Therefore, they would inevitably have more structured criteria and internal policies for employment, promotions, and retirement. In contrast, as the employees of relatively small workplaces, such as dental hospitals or clinics, are primarily dentists or dental hygienists, it is not very common to find established policies and standards regarding the definition of positions and advancement. It is presumed that such a structured personnel policy through bylaws would be related to high job satisfaction among dental hygienists at general hospitals and university dental hospitals. A previous study reported that the dental hygienists' job satisfaction was in proportion to their job position as well as their age, experience, and monthly income^{12,13)}. This indicates that job satisfaction might be affected by the position of a dental hygienist¹²⁾. A high level of job satisfaction of

Table 3. Main Tasks according to Current Position in Dental Institution

Task	Total	General hospitals, university dental hospital		p ^a	Dental hospitals, dental clinics		p ^a
		Manager	Member		Manager	Member	
Dental hygiene's unique tasks	340	16 (38.1)	91 (37.5)	0.936	62 (52.1)	171 (73.8)	<0.001
Dental assistance	569	31 (66.0)	234 (81.5)	0.015	82 (66.7)	222 (91.4)	<0.001
Reception and billing	287	30 (56.6)	175 (61.0)	0.550	42 (31.2)	40 (23.7)	0.014
Patient education and consultation	176	25 (44.6)	63 (22.7)	0.001	54 (42.2)	34 (15.0)	<0.001
Employee education and medical quality assurance	27	7 (12.7)	4 (1.5)	<0.001	12 (10.3)	4 (2.4)	0.005
Office administration or human resource tasks	55	9 (18.8)	12 (8.6)	0.053	18 (15.8)	16 (7.4)	0.017
Safety management	17	9 (13.6)	7 (5.2)	0.080	0 (0.0)	1 (1.0)	0.384
Dental hospital/clinic management	11	1 (2.0)	3 (1.4)	0.768	6 (12.8)	1 (2.5)	0.079
Others	27	0 (0.0)	6 (2.5)	0.311	1 (1.0)	20 (9.8)	0.005

Values are presented by number only or number (%).

^aBy chi-square test and Fisher's exact test.

dental hygienists was also reported to have a significant impact on the organizational contribution^{14,15}). Therefore, establishing objective and reasonable bylaws in all dental institutions to define the hierarchical system of dental hygienists will not only enhance their job satisfaction, but also contribute to the development of the dental institution.

Over the years, the diversity of professional tasks and the scope of the dental hygienists' responsibilities have continuously expanded and developed globally¹⁶⁻¹⁹). Despite the need for a standardized organizational system for dental hygienists with this global trend, a distinct legal framework regulating dental healthcare providers, such as dental therapists still does not exist in Korea²⁰). Furthermore, there is no consensus or established legal standards in place to maximize the effective utilization of these highly competent dental hygienists^{18,21}). Considering the dissimilarity in the tasks performed according to position, most task group areas showed significant variances. One noticeable trend was that the team manager tasks were predominantly administrative, whereas tasks performed by team members predominantly involved routine dental care services (Table 3). Our findings showed that dental hygienists performed different daily and main tasks, depending on their positions within their specific workplaces, with about 80% conducting routine dental hygiene tasks, dental assistance, reception and billing, patient education and consultation, employee education, medical quality assurance, and other duties (Fig. 1). When comparing differences in the main tasks across work settings, the differences by position were not as significant in general or university hospitals as in those at relatively smaller work settings, such as dental hospitals or clinics. Significant differences were detected between the team manager and team member groups in three task areas in the larger hospitals: dental assistance, patient education, and consultation. Those working in smaller dental hospitals or clinics showed significant differences with respect to their positions in seven of the nine areas of main tasks, the only exceptions being safety management and dental hospital/clinical management ($p < 0.05$) (Table 3). One possible explanation for this difference could be that job promotions are often determined based on work experience in dental hospitals and clinics. Team managers

with greater work experience perform more of administrative or managerial tasks, whereas individuals with less work experience tend to have team member positions; hence, their responsibilities are mainly related to clinically relevant and more entry-level tasks. These results indicate that job competency and position-related tasks are proportional²²). Considering this result, a standardized system should be proposed to ensure that appropriate tasks are allocated in proportion to the number of years of work experience. Moreover, relevant certification policies and educational requirements should be strengthened to improve this system.

This study is meaningful in that it provides evidence for the need of a task-related position system by analyzing the tasks of dental hygienists in Korea. Based on the results of this study, standardized organizational systems should be developed, which will eventually lead to improvements and promotions in dental institutions, and in job satisfaction.

Notes

Conflict of Interest

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

Ethical Approval

This study was approved by the Korea National Bioethics Committee's Institutional Review Board, designated by the Ministry of Health and Welfare of Korea (approval number: P01-201412-SB-05).

Author contributions

Conceptualization: Sung-Suk Bae. Data collection and analysis: Sung-Suk Bae, Sun-Young Han. Formal analysis: Sun-Young Han, Eun-Bi Sim. Writing - original draft: Eun-Ha Jung.

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