

The Study on Academic Definition and Developmental Direction of the Dental Hygiene Science in Korea

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치위생학의 학문적 정의와 위상에 따른 발전 방향에 관한 연구

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ABSTRACT It has passed 40 years since dental hygiene was introduced to Korea. At this time, We hereby demonstrate the findings from the survey on the academic definition and developmental direction of dental hygiene. This survey has been conducted on dental hygiene majoring students, dental clinic hygienists of health & medical care and related professors in the dental field. The findings show that there exists a big disparity in defining the academic scope of dental hygiene among students, clinical dental hygienists of health & medical care and university professors. Accordingly, we suggest that the academic scope of dental hygiene should be explained in a uniform definition. In addition, the results of this survey suggest that they feel that the status of dental hygiene is really behind other study fields, in view of such high response thereto. For development of dental hygiene study and enhancement of its social status, the joint professional study by private, government and scholars should be immediately promoted and a wide variety of programs for dental hygiene should be continuously implemented under the auspices of government and academic world.

Key words Dental hygiene science, Academic definition, Academic development

INTRODUCTION

The dental hygiene treatment had been performed by Alfred C. Fones, through his systematic training, in his own dental treatment room in september, 1913. Starting with the successive treatments carried out by 8 dental hygienists by lecturing tour programs in universities in Bridgeport city and the law for dental hygienist had been established in 19 states by 1922. From then, the term of dental hygienist was brought into the existence¹⁾. In 1965, Dr. Ji, Hun-Taek introduced American training program of dental hygienist to Korea and the training program of dental hygienist was initiated and implemented in 'Medical Technology Training Center', which is a part of college of medicine, Yonsei University. In 1967, four university students were graduated with the major in Korea and in 1974, the first national examination of dental hygienists produced eleven dental hygienists^{1,2)}. The system of dental hygienist in Korea has been highly improved over 4 decades since its introduction to Korea. Though three training centers, including Medical Technology Training Center

which was the first training center, a part of college of medicine of Yonsei University, were closed, the training of dental hygienist has been, up to date, implemented in training institutes in 7 four-year based universities and 46 three-year based colleges. While the volume of dental hygiene is dramatically expanded, we still face the lack of the academic development and data completeness³⁾. As the education curriculum for dental hygienist was revised to the courses on a three-year basis from on a two-year basis in 1994, the national examination of dental hygienist was also reformed to five subjects, which are 'introduction to oral biology', 'introduction to oral hygiene', 'clinical dentistry', 'introduction to dental radiology', 'medical service legislation'⁴⁾. The contents of the above some subjects are classified as follows: 1) oral anatomy, oral physiology, oral pathology, oral histology and embryology, and teeth morphology for introduction to oral biology, 2) preventive dentistry, scaling, oral clinic education, oral health statistics, oral care system, and regional oral health for Introduction to oral hygiene, 3) conservative dentistry, prosthodontia, periodontology, oral surgery, orthodontics, pedodontics, and dental materials for clinical dentistry. Given that the modification into dmuch in the dental hygiene field compared with the remarkably quantitative expansion. Japanese text books are superficially translated and used without scrutiny of the contents and the excerpts

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from American text books and dentistry textbooks are used for the text books of Korean dental hygiene study, though the circumstance and background of Korea is very different from America³⁾. Furthermore, the current dental hygienist education program is mainly focused on the medical assistance and the training of the dental hygienist as an assistant, which has shown a far cry from fostering of expert dental hygiene indispensable for in the real dental treatment. Therefore, it is definitely required that the education program of dental hygiene should be converged on training of the expert dental hygienist and prevention of dental disease directly relevant and innate to the dental hygienist⁵⁾. The purpose of this study is seeking to explore any possibility of development in the filed of dental hygiene by clear definition and proper enhancement of the dental hygiene status and to provide the fundamentals for the future developmental direction of dental hygiene.

METHODS

This survey was conducted on university professors including part-time professors, dental hygienists working in dental clinics

and health centers and junior level students majoring in dental hygiene in the universities, all of whom have been engaged in the dental hygiene from May to June, 2004. The full survey data set in this study included 275 responses (91.6%) and the research data was analyzed with SPSS 10.0 version.

RESULTS

1. The sociodemographic characteristics

The sociodemographic characteristics of the study subject are summarized in Table 1. Among participants in this survey consisted of 96.4% women and 3.6 % men, the number of respondent is 275 out of whom women occupy 96.4% and men comprise 3.6%. The average number of women respondents is overwhelmingly higher than men because most of people engaged in the dental hygiene are women. In addition, since a large number of students participated in this survey, the group of age 20~25 years among the total respondents is 56.7%, the group 20 years is 70.5%, the group 30 years is 15.2% and the group 40 years is 9.7%. The group of students is regarded as the best sample because they can provide better information for this study to the future of

Table 1. General condition of survey

Sociodemographic characteristics	Variable	Frequency (N)	Rate (%)
Gender	Male	10	3.6
	Female	265	96.4
Age	Below 20 years old	12	4.4
	20~25	156	56.7
	26~30	38	13.8
	31~35	29	10.5
	36~40	13	4.7
	41~45	18	6.6
	46~50	9	3.3
	over 50 years old	0	0.0
Working place	University & collage	141	51.3
	Dental clinic & hospital	58	21.1
	Health center	6	2.2
	Home	2	0.7
	Others	68	24.7
Geographic location	Seoul & Kyongki	84	30.5
	Daejeon & Chungnambuk	107	38.9
	Gangwon	32	11.6
	Daegu & Kyongnambuk	34	12.4
	Gwangju & Jeonnambuk	17	6.2
Occupation	Pusan & Kyongnambuk	1	0.4
	Undergraduate students	144	52.4
	Graduate students	3	1.1
	Professors(Including part-time basis professors, double job professors)	67	24.4
	Health & clinic	55	20.0
Highest level of education	Others	6	2.2
	Undergraduate students (Including enrolled students)	186	67.6
	Graduates students	33	12.0
	Doctorate (doctors)	38	13.8
	Others	18	6.5

dental hygiene study field. When it comes to the work place of the respondents, the respondents from universities, where students & professors (including part-time professors) occupy 51.3% among total respondents, dental clinic 21.1% and health center 2.2%, respectively. Regarding the residential place of the respondents, 'Seoul & Kyongki' area consists of 30.5%, 'Daejeon & Chung-Nam · Buk' 38.9%, 'Daegu & Kyongbuk' 12.4% and 'Gangwon' 11.6%. With respect to the current occupation of the respondents, undergraduate student respondents consist of 52.4%, university professors 24.4%, clinical health medicine 20.0%, graduate students 1.1% and others 2.2%. Such respondents as part-time professors and regular professors, engaged in graduate school, are classified as 'professors' not 'graduate school students' in the category of this survey. As for distribution of the final education, college students are 67.6%, 12% is graduated students, 13.2% is doctorate students and 6.5% is others.

2. The academic definition & status of dental hygiene

2.1 The scope of dental hygiene

In order to understand how the respondents think the academic definition of dental hygiene, the question of "In which academic category the dental hygiene falls?" is provided to the respondents. As shown in Table 2, 37.1% of respondents answered with 'Oral hygiene related study', while 34.2% thinks it is 'Public & preventive dentistry centered study', and 17% thinks it is 'The study related to all of the dental clinic & medicine'. Notably, 55.2% of professors responded with 'The study related to overall dental clinic & medicine', while 34.7% of students and 25.5% of clinical dental hygienists responded with such answer. This suggests that students differently think the scope of dental hygiene unlike those professors who think that dental hygiene is comprehensive study. Moreover, 45% of clinical dental hygienists responded that dental hygiene was 'Public & preventive dentistry centered study'. Accordingly, there is a big disparity in defining the academic scope of dental hygiene among students, professors (researchers), clinical dental hygienists of health & medical care. It is highly required that the academic scope of dental hygiene should be explained in a uniform definition & theory. Therefore, professors in dental hygiene field should sufficiently provide the education

program which contains 'Introduction of dental hygiene' and 'Orientation for dental hygiene', which will give the exact and unified definition of dental hygiene. Based on such education program, the common education objective and direction will be firmly established for the future of dental hygiene, as a consequence, the status of dental hygiene will be spontaneously improved as one of attractive occupations.

In addition, against the question of 'What first came into your head with dental hygiene?', the respondents of 32.3% answered that dental hygiene was necessary for fostering of dental hygienist in dental clinic & hospital' and 30.1% responded that it was the integrated study for public health. As shown in Table 3, most of professors & clinical dental hygienists responded that it was the integrated study for public health, and otherwise most of students responded that it was necessary for fostering of dental hygienist in dental clinic & hospital. These results suggest that students in dental hygiene field have a very limited knowledge on dental hygiene and they regard such study as the practical study necessary for working in dentistry clinic or hospitals only. In conclusion, the basic definition of dental hygiene should be established immediately and should be updated for the related persons through the systematic training.

2.2 Dental Hygiene related media

Advertising and informing of dental hygiene to public as well as the dental related people are very conducive development of the dental hygiene. The Table 4 shows the result of survey on which media is most accessible to the people studying the dental hygiene. As shown in Table 4, 50.1% of total respondents answered with 'School things', 21.8 with 'Professional books & papers' and 17.8% with 'Seminar & symposium'. By occupation, 81.2% of students have access to the dental hygiene in school while professors have access to the dental hygiene through 'Professional books & papers' and in 'Seminar & symposium'. Accordingly, the priority of providing the intensified courses for development of dental hygiene should be performed in the order of the following: the activation of 'Professional books & papers' and the activation of 'Seminar & symposium'. The students for dental hygiene would rather build up their study through

Table 2. The academic scope of dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)
Oral hygiene related study	50(34.7)	37(55.2)	14(25.5)	1(16.7)	102(37.1)
Practical study in clinical dentistry	16(11.1)	8(11.9)	7(12.7)	1(16.7)	32(11.6)
Public & preventive dentistry centered study	53(36.0)	15(22.4)	25(45.5)	1(16.7)	94(34.2)
The study related to all of the dental clinic & medicine	28(19.0)	7(10.4)	9(16.4)	3(50.0)	47(17.1)
Total (%)	147(100)	67(100)	55(100)	6(100)	275(100)

Table 3. What first came into your head with dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)
Necessary to produce dental hygienist in dental clinic & hospital	50(34.7)	21(31.3)	15(27.2)	3(50.0)	89(32.3)
The synthetic study for oral care training	21(14.5)	8(11.9)	9(16.3)	0(0.0)	38(13.8)
The oral hygiene related study	35(24.3)	16(23.8)	12(21.8)	2(33.3)	65(23.6)
The synthetic study for public health	41(27.9)	22(32.8)	19(34.5)	1(16.6)	83(30.1)
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)

Table 4. Dental hygiene related media

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)	
TV	1(0.6)	0(0.0)	0(0.0)	0(0.0)	1(0.3)	
Newspaper & journal	2(1.4)	0(0.0)	8(14.5)	0(0.0)	10(3.6)	
Educational books	2(1.3)	0(0.0)	2(3.6)	0(0.0)	4(1.4)	
Professional books & papers	14(9.7)	38(56.7)	6(10.9)	2(33.3)	60(21.8)	
School things	118(80.3)	10(14.9)	6(10.9)	4(66.6)	138(50.1)	.000*
Honorarium education	3(2.0)	0(0.0)	6(10.9)	0(0.0)	9(3.2)	
Seminar & symposium	5(3.4)	18(26.8)	26(47.2)	0(0.0)	49(17.8)	
Others	2(1.3)	1(1.4)	1(1.8)	0(0.0)	4(1.4)	
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)	

χ^2 -test; *p < 0.01

the intensified course in universities rather than publicized medium. Since the professors have access to the dental hygiene through professional books & papers and clinical dental hygienists access to the dental hygiene through symposiums or seminars, it is highly recommended, through the systematic and professional education and R & D activities, to improve and enrich the dental hygiene information in Korea and to continuously devote our efforts for development of international dental hygiene.

Most important for enhancing the future dental hygiene study and upgrading the status of dental hygienists is that all the public people should be tattooed in their brain with such understanding that dental hygiene is the most professional and conducive study for public oral health. Therefore, such question: 'What is the most crucial for better understanding of the dental hygiene?' is provided to the respondents. The results are shown in Table 5. As for Table 5, 56.7% of total respondents answered with 'Internet' and 26.5% with 'Nationwide events for public' and 9.4% with 'Regular lecture'. This result suggests that students, professors and clinical dental hygienists have similar understanding of such importance. In conclusion, it is highly recommended that the advertisement of the dental hygiene should be actively conducted to

public through internet by developing various contents to upgrade the image of the dental hygiene and it will be great if such nationwide events as setting 'the day of teeth' are perform.

2.3 The academic status of dental hygiene

(1) The current status of dental hygiene

As for the current status of dental hygiene, 4.7% of total respondents answered with 'Very underdeveloped', 41.1% with 'Underdeveloped' and 34.5% with 'Similar to other study fields'(Table 6). According to the survey, 45% of the dental hygiene related people negatively answered to the status of dental hygiene. Therefore, the dental hygiene related people should make more efforts to upgrade the status of dental hygiene and perform excellent jobs to convey better status of dental hygiene to the successors.

(2) The reason for the underdevelopment of dental hygiene

The question of 'Why do you think that dental hygiene is underdeveloped compared with other studies?' are presented to those respondents who negatively answered to the foregoing question(Table 7). The respondents of 61.9% answered with 'The lack of social understanding of dental hygiene' and 16%

Table 5. The method to provide public with better understanding of the dental hygiene

Variable	Students (%)	Professors (%)	Health & Clinic(%)	Others (%)	Total (%)	p
Media (poster, motto)	8(5.5)	5(7.4)	4(7.2)	1(16.6)	18(6.5)	
Regular lecture	12(8.2)	4(5.9)	10(18.1)	0(0.0)	26(9.4)	
Nationwide events	40(27.2)	15(22.3)	17(30.9)	1(16.6)	73(26.5)	0.01*
Media (internet) advertising	85(59.0)	43(64.1)	24(43.6)	4(66.6)	156(56.7)	
Others	2(1.3)	0(0.0)	0(0.0)	0(0.0)	2(0.7)	
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)	

χ^2 -test; *p < 0.01

Table 6. The current status of dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)
Highly developed	1(0.6)	0(0.0)	0(0.0)	0(0.0)	1(0.4)
Somewhat developed	28(19.4)	8(11.9)	17(30.9)	0(0.0)	53(19.3)
Similar to other studies	45(30.6)	27(67.0)	22(40.0)	1(16.7)	95(34.5)
Underdeveloped	65(44.2)	30(44.8)	14(25.5)	4(66.7)	113(41.1)
Highly underdeveloped	8(5.9)	2(3.0)	2(36.4)	1(16.7)	13(4.7)
Total	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)

Table 7. The reason for the underdevelopment of dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)	p
Lack of social understanding	55(75.3)	11(32.3)	12(70.5)	3(50.0)	81(61.9)	.000*
Lack of support from government, society, universities	14(19.2)	4(11.8)	1(5.9)	2(33.3)	21(16.0)	
Lack of researchers	2(2.7)	11(32.4)	3(21.4)	0(0.0)	16(12.2)	
Bad condition for research & study	3(4.1)	8(23.5)	1(5.9)	1(16.7)	13(9.9)	
Total (%)	74(100.0)	34(100.0)	17(100.0)	6(100.0)	131(100.0)	

χ^2 -test; *p < 0.01

replied with 'The lack of support for dental hygiene from government, society, or universities'. In conclusion, the lack of understanding and support for dental hygiene resulted in such status of this study. Therefore, the change of social understanding of dental hygiene is strongly required to improve dental hygiene.

(3) The effort to the development of dental hygiene

To the question of 'what is most crucial thing for the development of dental hygiene?' (Table 8), 40.7% responded with 'The effort to upgrade the status of dental hygienist', 27.2% with 'The effort to improve the social understanding' and 17% with 'The policy & system support'. However, this survey shows that the priority response varies among students, professors and clinical dental hygienists, which students put 'The upgrade of the status of dental hygienist' on the top priority, while clinical dental hygienists emphasize the improvement of the social understanding.

2.4 The impending issues to develop dental hygiene

(1) Public institutions

For the question that the most impending issue for public institutions to develop dental hygiene, 41.0% responded with 'The systematic support for nurturing researchers', 26.5% with 'The support for the professional research of dental hygiene', 18.9%

with "The systematic support for nurturing teaching personnel" and 11.2% with 'Providing professional books for specific fields'. Particularly, the systemic supports, namely, the establishment of graduate schools for this study and the systematic support for studying abroad, should be preceded for continuous study of dental hygiene (Table 9).

(2) Private Institutions

For the question that the most impending issue for private institutions to develop the dental hygiene, the responses are varied, among which 68.3% responded with "The development of the joint education program", 22.9% with 'Progressing the joint research program', 6.5% with 'The cultivation of professional books' and 2.1% with others (Table 10).

(3) Academic associations

For the question of 'what those academic associations related to dental hygiene (The Korean society of dental hygiene science, Korean dental hygienists association', and Korean academy of dental hygiene education) should drive in order to develop the dental hygiene, 61.8% responded with 'The activation of research on dental hygiene & Information communication' and 24.7% with 'The development of joint education program' (Table 11). Given

Table 8. The effort to the development of dental hygiene

Variable	Students (%)	Professors (%)	Health & Clinic (%)	Others (%)	Total (%)	p
The effort to improve the social understanding	37(25.2)	14(20.8)	21(38.1)	3(50.0)	75(27.2)	.000*
The effort to upgrade the status of dental hygienist	72(49.0)	20(29.8)	19(34.5)	1(16.6)	112(40.7)	
The establishment of education program for researcher	12(8.3)	12(17.9)	8(14.5)	0	32(11.6)	
The policy & system support	24(16.6)	16(23.8)	5(9.0)	2(33.3)	47(17.0)	
Holding various seminar & workshop	1(0.6)	4(5.9)	1(1.8)	0	6(2.1)	
Others	1(0.6)	1(1.4)	1(1.8)	0	3(1.0)	
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)	

χ^2 -test; *p < 0.01

Table 9. The support of public institutions for the development of dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)	p
Support for the training program for teaching personnel and researchers	25(17.0)	16(23.8)	10(18.1)	1(16.6)	52(18.9)	.000*
Support for providing professional books	21(14.3)	1(1.4)	9(16.3)	0(0.0)	31(11.2)	
Support for professional research	39(27.0)	21(31.3)	10(18.1)	3(50.0)	73(26.5)	
Systematic support for nurturing researchers	60(40.8)	27(40.2)	24(43.6)	2(33.3)	113(41.0)	
Others	2(1.3)	2(2.9)	2(3.6)	0(0.0)	6(2.1)	
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)	

χ^2 -test; *p < 0.01

Table 10. The support of private institutions for the development of dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)	p
The cultivation of professional book	11(7.4)	2(2.9)	4(7.2)	1(16.6)	18(6.5)	.000*
The development of the joint education program	104(70.7)	46(68.6)	35(63.6)	3(50.0)	188(68.3)	
Progressing the joint research program	31(21.1)	18(26.8)	14(25.4)	0(0.0)	63(22.9)	
Others	1(0.6)	1(1.4)	2(3.6)	2(33.3)	6(2.1)	
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)	

χ^2 -test; *p < 0.01

Table 11. The drives of associations related to the dental hygiene

Variable	Students (%)	Professors (%)	Health/Clinic (%)	Others (%)	Total (%)	p-value
The cultivation of professional books	5(3.4)	1(1.4)	3(5.4)	2(33.3)	11(4.0)	.000*
The cultivation of joint education program	37(25.2)	18(26.8)	12(21.8)	1(16.6)	68(24.7)	
Progressing the joint research program	12(8.3)	8(11.9)	4(7.2)	1(16.6)	25(9.0)	
The activation of research on the dental hygiene & information communication	93(63.3)	40(59.7)	36(65.4)	1(16.6)	170(61.8)	
Others	0(0.0)	0(0.0)	0(0.0)	1(16.6)	1(0.3)	
Total (%)	147(100.0)	67(100.0)	55(100.0)	6(100.0)	275(100.0)	

χ^2 -test; *p < 0.01

the above, Korean dental hygienists association (KDHA) and other related associations, which lead the study of dental hygiene in Korea, should focus on the activation of research & information communication and should seek for the development of dental hygiene in Korea by providing various joint education programs.

CONCLUSIONS

This survey was conducted on dental hygienists working in dental clinics and hospitals and students majoring in dental hygiene in the universities, who have engaged in dental hygiene from May to June, 2004. The full survey data set in this study included 275 responses, which occupied 91.6% among the interviewee. By analyzing the findings of this survey, we are obtained the following conclusion:

1. For the question provided in this survey to figure out the respondents' understanding of the academic scope of dental hygiene, the most frequent response is 'The study related to all of the dental clinic & medicine' with the rate of 37.1%. More specifically, with the highest rate, students and clinical dental hygienists responded with 'Public & preventive dentistry centered study' and professors responded with 'The study related to all of the dental clinic & medicine' with the highest rate.
2. For the method to provide public with better understanding of dental hygiene, Media (internet) advertising accounts for 56.7% in the responses of total and there is significant difference among the responses in the statistical term.
3. For the question of the current status of dental hygiene, the response that dental hygiene is highly underdeveloped compared to other studies accounting for the highest rate of the responses, 41.1%. Students responded with 'underdeveloped' and professors & clinical dental hygienists responded with 'similar to other studies' with the most frequent rate. For the question of the reason for the underdevelop-

ment of dental hygiene in Korea, 61.9% responded with 'the lack of social understanding of the dental hygiene' and there is statistically significant difference among the responses.

4. For the question of the effort for developing dental hygiene, 40.7%, the most frequent response rate, responded with 'The effort to upgrade the status of dental hygienists'. For the support of public institutions for the development of dental hygiene, 41.0% responded with 'systematic support for nurturing researchers'. For the support of private institutions for the development of dental hygiene, 68.3% responded with 'the development of the joint education program' and for the drives of associations related to dental hygiene, 61.8% responded with 'The activation of research on dental hygiene and information communication', which there is statistically significant difference among the responses.

요 약

우리나라 치위생학이 도입되지 약 40여년이 지난 시점에서 치위생학 전공자들의 학문적 정의와 위상에 대하여 치위생(학)과 학생과 보건의료분야의 임상치과위생사 및 교직원 관련 분야의 대상자에게 설문을 통해 전공분야에 대한 학문적 정의와 위상에 대한 조사를 실시한 결과 치위생학의 학문적 범위는 학생과 보건의료분야 임상치과위생사와 대학교수간의 차이가 두드러지게 나타나 통일된 학문적 범위를 설정하여야 할 것으로 사료되며, 현재 치위생학의 위상은 다른 학문에 비해 뒤쳐져 있다고 생각하는 비율이 매우 높게 조사되었으므로, 치과위생사의 발전을 위해 사회적 위상제고를 위한 민,관,학회 공동의 전문연구를 지원하고 또한 프로그램을 개발하여 사회적 인식을 변화시킬 수 있는 연구가 조속히 이루어져 할 것으로 사료된다.

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