

The Influence of Dental Hygienists' Self-Leadership on Organizational Commitment and Quality of Medical Services

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Background: Self-leadership, an action strategy that can maximize individual capabilities, can affect the organizational commitment of dental hygienists and ultimately improve the quality of medical services. This study aims to demonstrate the need for self-leadership and organizational commitment for dental hygienists and develop measures to improve the quality of medical services.

Methods: An online survey of dental hygienists working at dental hospitals and clinics in Seoul and Gyeonggi province, Republic of Korea was conducted from March 28 to May 1, 2022. A total of 341 questionnaires were returned and analyzed. The measurement tools were modified and supplemented based on the theories and models developed by Manz for self-leadership, Mowday for organizational commitment, and Cronin and Taylor for medical services. Descriptive statistics, independent t-tests, ANOVA, simple regression, and multiple regression analyses were performed using SPSS 25.0.

Results: In leadership education, self-leadership is based on participation experience, the number of participants, and when and where it is received. Organizational commitment comes from participation experience, and the quality of medical services has been found to affect participation experience and location. Self-leadership had an effect on the quality of medical services ($\beta=0.497$, $t=10.551$, $p<0.001$; $\beta=0.599$, $t=13.783$, $p<0.001$; $\beta=0.353$, $t=7.601$, $p<0.001$) and organizational commitment was found to have a mediating effect.

Conclusion: Dental hygienists' self-leadership has a positive effect on the quality of medical services through the formation of appropriate interrelationships within the organization. Therefore, self-leadership programs should be developed, participated in, and promoted to improve the self-leadership of dental hygienists. Moreover, hospitals should improve their environment to provide and improve self-leadership education.

Key Words: Dental health services, Dental hygienist, Organizational culture, Self-management

Introduction

1. Background and purpose

As the public's attention shifts beyond simply curing diseases to maintaining and improving health and quality of life, providing patient-centered dental medical services and improving the quality of those services are recognized

as important issues¹⁾.

Dental hygienists in clinical settings must improve their capabilities to improve the quality of dental services at a time when the importance of comprehensive roles is growing, including data collection to establish a patient's entire treatment plan, cooperation with the treatment process, and training for continuous management²⁾.

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In today's rapidly changing society, the ability of all members, not just one leader, to autonomously and responsibly take charge of the organization's pending issues is required³⁾. Thus, interest in self-leadership is increasing; unlike traditional leadership, in which a single leader influences its members, self-leadership allows all members to change themselves and their organizations through internal motivation and voluntary performance⁴⁾. For dental workers to increase customer satisfaction in a rapidly changing medical environment, it is necessary to increase initiative, define service requirements, and exercise self-leadership⁵⁾.

Self-leadership is the process of exerting influence on oneself to realize the self-directed and self-motivated requirements to perform tasks and duties⁶⁾. This is an individual characteristic that everyone possesses, but there are differences in its potential depending on the individual, and it can be encouraged and developed through learning or education⁷⁾. In the case of dental hygienists, there are situations where self-leadership and coping skills are needed in dealing with patients; therefore, efforts should be made to strengthen each individual's level of self-leadership⁸⁾. If dental hygienists have self-leadership, they will be motivated to not only perform dental hygiene work but also to increase their creativity and job performance and provide high-quality dental medical services⁸⁾. Therefore, self-leadership is a key concept for dental hygienists to effectively improve the quality of dental care services as a factor influencing their work⁹⁾. Meanwhile, organizational commitment, which is an organizational factor influenced by self-leadership, refers to the emotional response of members to the organization and the degree to which an individual is imbued with a sense of unity¹⁰⁾. In summary, internal leadership centered on autonomy, such as setting one's own goals and self-control, is effective in achieving the organization's purpose more easily by evoking the dedication and enthusiasm of organization members¹⁰⁾. Members with a high level of organizational immersion tend to pursue psychological stability and stay in the organization¹¹⁾, motivate themselves to act positively for it, and abstain from absenteeism or job changes that negatively affect the organization¹²⁾. Organizational immersion also contributes to organizational achievement through creative activities

by establishing a more harmonious relationship with colleagues¹³⁾. When members of dental health institutions feel attached to and responsible for the organization, they do their best for the patient¹⁴⁾. Organizational commitment, including atmosphere, cooperation, and communication among members, is greatly related to the quality of dental medical services¹⁵⁾.

Previous studies on self-leadership and organizational commitment have considered the effect of self-leadership and team reliability on organizational commitment for hospital nurses¹⁶⁾, the effect of job satisfaction and self-leadership on organizational commitment for members of small- and medium-sized hospitals¹⁷⁾, the effect of dental hygienists' self-leadership on organizational effectiveness and work ability¹⁸⁾, and the self-leadership, job satisfaction, and organizational commitment of dental hygienists working at dental hospitals and clinics in rural areas¹⁹⁾.

However, studies that suggest self-leadership as a leading factor in dental medical service quality, which is the ultimate goal of dental hygienists' work, are insufficient, and research focusing on self-leadership, organizational commitment, and dental medical service quality is needed.

Therefore, this study aimed to analyze the effect of self-leadership on organizational commitment and dental medical service quality by investigating the degree of self-leadership, organizational commitment, and dental medical service quality of dental hygienists. Furthermore, it analyzes the effect of self-leadership on the quality of dental medical services by assessing organizational commitment as a mediating factor, seeking to provide the basic data necessary to create measures that can improve the quality of dental medical services by improving self-leadership and organizational commitment.

Materials and Methods

1. Ethics statement

This study was conducted with the approval of Institutional Review Board of Eulji University (approval number: EUIRB 2022-014). Informed consent was obtained from participants.

2. Study design

A convenience sample of 351 dental hygienists working at dental hospitals and clinics in Seoul and Gyeonggi province, Republic of Korea was collected and an online survey was conducted from March 28 to May 1, 2022, with consent for the necessity and purpose of the study. Among the collected surveys, 10 incomplete responses were excluded and a total of 341 were used as the final analysis data.

3. Sample size

The minimum sample size required for ANOVA was selected for this study using the G*Power 3.1 program. The minimum number of samples was calculated to be 324, considering an effect size of 0.25, significance level of 0.05, and power of 95%. A total of 351 people were surveyed in consideration of the dropout rate.

4. Survey tools

The measurement items included in the questionnaire consisted of questions regarding general characteristics, leadership education, self-leadership, organizational commitment, and quality of medical services.

1) General characteristics

The general characteristics items consisted of 12 questions regarding sex, age, education level, marital status, position, work experience, monthly income, the workplace, number of employees, main task, personality, and propensity.

2) Leadership education

The leadership education items consisted of four questions: participation experience, frequency, education period, and education place.

3) Self-leadership

Self-leadership refers to the behavioral mindset taken to influence oneself, and the scale developed by Manz⁶⁾ and modified and supplemented by Kim²⁰⁾ was used to measure it in this study. The scale consists of 18 questions divided into six dimensions with three questions each: self-expectation, rehearsal, goal setting, self-compensation,

self-criticism, and constructive thinking. Kim's²⁰⁾ study had a reliability of Cronbach's alpha=0.87, and the Cronbach's alpha in this study was 0.84. Each question was measured on a 5-point Likert scale; the higher the score, the higher the degree of a dental hygienist's self-leadership, with 5 points for 'very much so' and 1 point for 'very not so'.

4) Organizational commitment

Organizational commitment, which refers to the tendency to remain in the current organization, refers to an individual's relative identification or intensity of involvement with a specific organization, or a feeling of unity, preoccupation, and attachment to the organization to which one belongs. The scale, developed by Mowday¹¹⁾ and modified and supplemented by Chung²¹⁾, consists of 12 items. Chung's study²¹⁾ had a reliability of Cronbach's alpha=0.90, and the Cronbach's alpha in this study was 0.94. Each question was measured on a 5-point Likert scale; the higher the score, the higher the degree of a dental hygienist's organizational commitment, with 5 points for 'very much so' and 1 point for 'very not so'.

5) Quality of medical services

Quality of medical services refers to the difference between consumer expectations and actual performance²²⁾. The scale for dental medical services adapted by Lee²³⁾ to measure Korean nursing service quality based on the model proposed by Cronin and Taylor²⁴⁾ was used in this study and consists of 20 items. Lee's study²³⁾ had a reliability of Cronbach's alpha=0.97, and the Cronbach's alpha in this study was 0.93. The items were measured on a 5-point Likert scale; the higher the score, the higher a dental hygienist's degree of dental medical service quality, with five points for 'very much so' and 1 point for 'very not so'.

5. Data analysis

The collected data were analyzed using IBM SPSS version 25.0 (IBM Corp., Armonk, NY, USA). Frequency analysis was used to assess the general characteristics. An independent t-test and one-way ANOVA were used to investigate self-leadership, organizational commitment, and the quality of medical services according to the general characteristics of the study subjects, and the post-analysis

was verified using the Scheffe test. A simple regression analysis was conducted to determine the effect of self-leadership on organizational commitment and quality of medical services. To verify the causal relationship between variables, the relationship between self-leadership as an independent variable and medical service quality as a dependent variable was verified, and the mediating effect of organizational commitment on the relationship between self-leadership and medical service quality was verified. For this purpose, a three-step multiple regression analysis was conducted to verify the mediating effects based on Baron and Kenny²⁵⁾. In the first step, the influence of the independent variable and the parameter are presented, followed by the influence of the independent and dependent variable in the second step, and the influence of the independent variable, the parameter, and the dependent variable are presented in the order of the analysis results in the third step. A Sobel test was also conducted to determine whether the effect of the parameters in this study was statistically significant. The statistical significance level was set as $p < 0.05$.

Results

1. General characteristics of the study subjects

Regarding general characteristics of the 341 (100%), subjects were 319 (93.5%) of the study subjects were 'female', 145 (42.5%) were '25~29 years old', 171 (50.1%) had a 'four-year college degree', and 261 (76.5%) were 'unmarried'. Regarding employment and income, 240 participants (70.4%) were 'staff', 117 (34.3%) had 'less than 2 years' work experience, 149 (43.7%) had '2 million to 2.49 million won' in monthly income, 275 (80.6%) indicated 'dentist clinic' as the workplace, with the highest reported number of employees being '5~9' 93 (27.3%), and 284 (83.3%) answered 'dental care' as the main task. Regarding personality and propensity, 204 participants (59.8%) indicated 'extroverted' for personality, and 227 (66.6%) indicated 'active' as the propensity (Table 1).

Table 1. General Characteristics of the Study Subjects (n=341)

Variable	n (%)		
Sex	Male	22 (6.5)	
	Female	319 (93.5)	
Age (y)	≤ 24	107 (31.4)	
	25 ~ 29	145 (42.5)	
	30 ~ 34	41 (12.0)	
	≥ 35	48 (14.1)	
Degree of education	A junior college graduation	158 (46.3)	
	A four year college graduation	171 (50.1)	
	Graduate and higher	12 (3.5)	
Material status	Unmarried	261 (76.5)	
	Married	80 (23.5)	
Position	Staff	240 (70.4)	
	Team leader	51 (15.0)	
	Head of department and higher	50 (14.7)	
Work experience (y)	< 2	117 (34.3)	
	2 ~ 5	103 (30.2)	
	5 ~ 10	71 (20.8)	
	≥ 10	50 (14.7)	
Monthly income (million won)	< 2	32 (9.4)	
	2 ~ 2.49	149 (43.7)	
	2.5 ~ 2.99	90 (26.4)	
	3 ~ 3.49	38 (11.1)	
	≥ 3.5	32 (9.4)	
	The workplace	Dental clinic	275 (80.6)
		Dental hospital	66 (19.4)
The number of employees (people)	< 5	47 (13.8)	
	5 ~ 9	93 (27.3)	
	10 ~ 19	78 (22.9)	
	20 ~ 29	81 (23.8)	
	≥ 30	42 (12.3)	
Main task	Dental care	284 (83.3)	
	Reception	20 (5.9)	
	Counseling	37 (10.9)	
Personality	Extroverted	204 (59.8)	
	Introverted	124 (36.4)	
	Unknown	13 (3.8)	
Propensity	Active	227 (66.6)	
	Passive	87 (25.5)	
	Unknown	27 (7.9)	

2. Study subjects' level of self-leadership, organizational commitment, and quality of medical services

Self-leadership was scored 3.95 out of 5. On the lower end, self-compensation was the highest at 4.14, followed by rehearsal at 4.06, self-expectation at 4.03, constructive

thinking at 3.94, self-targeting at 3.85, and self-criticism at 3.70. Organizational commitment was 3.58, and quality of medical services was 4.25 (Table 2).

3. Self-leadership, organizational commitment, and quality of medical services based on the general characteristics of the study subjects

Table 3 shows the self-leadership, organizational commitment, and quality of medical services based on the general characteristics of the study subjects.

1) Self-leadership

Self-leadership showed statistically significant differences among the number of employees, main tasks, personality, and propensity ($p < 0.001$). The post-test showed that self-leadership was lower in the number of employees category of 'less than 9' compared to those with 10 or more, and 20 to 29. The main tasks were 'dental care' and 'counseling' in contrast to 'reception'. 'Extrovert' showed higher self-leadership than 'introvert' and 'don't know', while an 'active' propensity showed higher self-leadership than 'passive' and 'don't know'.

2) Organizational commitment based on the general characteristics of the study subjects

The research subjects showed significant differences in age, education level, position, work experience, monthly income, number of employees, main task, personality, and propensity ($p < 0.001$). The post-test results showed that

Table 2. Level of Self-Leadership, Organizational Commitment, and Quality of Medical Services of the Study Subjects (n=341)

	Variable	M±SD
Self-leadership	Total	3.95±0.49
	Self-expectation	4.03±0.72
	Rehearsal	4.06±0.78
	Self-target	3.85±0.80
	Self-compensation	4.14±0.69
	Self-criticism	3.70±0.86
Organizational commitment	Total	3.58±0.89
	Quality of medical services	4.25±0.52

organizational commitment was higher in those 'over 30 years of age', and the group with the position of 'head of department and higher' was more than 'staff' or 'team leader'. The main task was 'counseling' rather than 'dental care' or 'reception'. As for the propensity, 'active' was higher than 'passive' and 'don't know'.

3) Quality of medical services based on the general characteristics of the study subjects

The quality of medical services showed significant differences in age, education level, marital status, position, work experience, monthly income, number of employees, main tasks, personality, and propensity ($p < 0.01$, $p < 0.001$). The post-test results showed that the quality of medical services was higher in the group with more than five years of work experience than those with less than five years. Regarding employees, quality of medical services was higher for clinical settings with '20~29' and '30 or more' employees than those with '19 people or less'.

4. Self-leadership, organizational commitment, and quality of medical services based on the leadership education of the study subjects

Table 4 shows the self-leadership, organizational commitment, and quality of medical services based on the leadership education of the study subjects.

1) Self-leadership based on leadership training

The subjects' leadership education showed significant differences in leadership education experience, participation frequency, period, and training place ($p < 0.05$, $p < 0.01$). The post-test showed that those who participated in leadership training 'two or less times' were more than those who participated 'more than three times', and the leadership training participation was 'two or less times more than three times', and the leadership training places were more often 'schools', 'hospitals', 'associations', and 'academies than private institutions'.

2) Organizational commitment based on the leadership education of the study subjects

There was a significant difference in leadership edu-

Table 3. Self-leadership, Organizational Commitment, and Quality of Medical Services based on the General Characteristics of the Study Subjects (n=341)

Variable	Self-leadership		Organizational commitment		Quality of medical services		
	M±SD	p-value	M±SD	p-value	M±SD	p-value	
Sex	Male	3.89±0.51	0.511	3.55±1.17	0.085	4.26±0.52	0.826
	Female	3.96±0.48		3.96±0.48		4.23±0.51	
Age (y)	≤ 24	3.89±0.43	0.133	3.45±0.82 ^c	0.001	4.08±0.55 ^b	<0.001
	25 ~ 29	3.99±0.51		3.48±0.93 ^{bc}		4.26±0.51 ^{ab}	
	30 ~ 34	4.06±0.57		3.92±0.87 ^a		4.48±0.38 ^a	
	≥ 35	3.90±0.44		3.88±0.78 ^{ab}		4.45±0.42 ^a	
Degree of education	A junior college graduation	3.92±0.49	0.541	3.72±0.83 ^{ab}	<0.001	4.29±0.50 ^b	0.001
	A four year college graduation	3.97±0.49		3.41±0.90 ^b		4.19±0.53 ^b	
	Graduate and higher	4.04±0.29		4.22±0.84 ^a		4.75±0.33 ^a	
Material status	Unmarried	3.95±0.48	0.427	3.47±0.88	0.108	4.20±0.54	<0.001
	Married	3.96±0.51		3.94±0.82		4.44±0.38	
Position	Staff	3.94±0.48	0.456	3.41±0.89 ^b	<0.001	4.16±0.54 ^b	<0.001
	Team leader	3.92±0.53		3.82±0.82 ^a		4.45±0.39 ^a	
	Head of department and higher	4.03±0.46		4.17±0.58 ^a		4.52±0.37 ^a	
Work experience (y)	< 2	3.39±0.87	0.105	3.39±0.87 ^a	0.009	4.10±0.55 ^b	<0.001
	2 ~ 5	3.57±0.91		3.57±0.91 ^a		4.25±0.53 ^{ab}	
	5 ~ 10	3.78±0.93		3.78±0.93 ^a		4.41±0.44 ^a	
	≥ 10	3.78±0.72		3.77±0.72 ^a		4.42±0.41 ^a	
Monthly income (million won)	< 2	3.92±0.59	0.578	3.54±0.81 ^a	0.005	4.04±0.79 ^b	0.009
	2 ~ 2.49	3.97±0.44		3.43±0.91 ^a		4.21±0.45 ^{ab}	
	2.5 ~ 2.99	3.98±0.52		3.59±0.93 ^a		4.30±0.55 ^{ab}	
	3 ~ 3.49	3.83±0.55		3.86±0.73 ^a		4.39±0.42 ^a	
	≥ 3.5	3.97±0.42		3.98±0.73 ^a		4.42±0.41 ^a	
The workplace	Dental clinic	3.93±0.50	0.060	3.54±0.87	0.364	4.26±0.53	0.845
	Dental hospital	4.05±0.42		3.76±0.87		4.27±0.47	
The number of employees (people)	< 5	3.78±0.38 ^c	<0.001	3.49±0.97 ^{ab}	<0.001	4.19±0.47 ^{abc}	<0.001
	5 ~ 9	3.80±0.54 ^c		3.47±0.92 ^b		4.15±0.61 ^{bc}	
	10 ~ 19	3.90±0.42 ^{ab}		3.41±0.82 ^b		4.13±0.49 ^c	
	20 ~ 29	4.21±0.43 ^a		3.96±0.67 ^a		4.46±0.45 ^a	
	≥ 30	4.11±0.44 ^{ab}		3.54±1.02 ^{ab}		4.41±0.37 ^{ab}	
Main task	Dental care	3.98±0.50 ^a	0.001	3.52±0.91 ^b	0.001	4.24±0.53 ^b	<0.001
	Reception	3.58±0.35 ^b		3.47±0.74 ^b		4.02±0.37 ^b	
	Counseling	4.01±0.43 ^a		4.11±0.60 ^a		4.54±0.34 ^a	
Personality	Extroverted	4.11±0.43 ^a	<0.001	3.82±0.80 ^a	<0.001	4.38±0.47 ^a	<0.001
	Introverted	3.73±0.47 ^b		3.22±0.93 ^b		4.10±0.54 ^a	
	Unknown	3.62±0.54 ^b		3.38±0.60 ^{ab}		3.80±0.41 ^b	
Propensity	Active	4.09±0.43 ^a	<0.001	3.76±0.84 ^a	<0.001	4.41±0.41 ^a	<0.001
	Passive	3.63±0.48 ^b		3.21±0.91 ^b		3.93±0.59 ^b	
	Unknown	3.82±0.41 ^b		2.20±0.77 ^b		3.98±0.53 ^b	

^{a,b,c} by scheffe test (means with the same letters are not significantly different).
p-value by one-way ANOVA or t-test.

cation experience (p<0.001) among the study subjects.

3) Quality of medical services based on the leadership education of the study subjects

There were significant differences in the leadership

Table 4. Self-Leadership, Organizational Commitment, and Quality of Medical Services according to the Leadership Education of the Study Subjects (n=341)

Variable	n (%)	Self-leadership		Organizational commitment		Quality of medical services	
		M±SD	p-value	M±SD	p-value	M±SD	p-value
Leadership training experience							
Yes	124 (36.4)	4.02±0.35	0.045	3.83±0.81	<0.001	4.32±0.56	0.049
No	217 (63.6)	3.91±0.48		3.44±0.89		4.21±0.50	
Leadership training participation frequency							
One-time	47 (13.8)	4.09±0.44 ^{ab}	0.025	3.78±0.80	0.845	4.29±0.49	0.184
Two times	24 (7.0)	4.20±0.38 ^a		3.85±0.93		4.50±0.39	
More than three times	35 (10.3)	3.90±0.44 ^b		3.88±0.86		4.37±0.49	
Leadership training period							
Before employment	48 (14.1)	4.14±0.42	0.037	3.84±0.97	0.915	4.33±0.56	0.607
After employment	58 (17.0)	3.98±0.43		3.82±0.73		4.38±0.39	
Leadership training place							
School	39 (11.4)	4.15±0.44 ^a	0.003	3.74±1.01	0.055	4.24±0.56 ^a	0.008
Hospital	15 (4.4)	4.14±0.33 ^a		4.19±0.52		4.42±0.26 ^a	
Private institutions, etc	26 (7.6)	3.78±0.43 ^b		3.55±0.78		4.26±0.44 ^a	
Association and Academy	26 (7.6)	4.12±0.89 ^a		4.04±0.69		4.61±0.34 ^a	

^{a,b,c} by scheffe test (means with the same letters are not significantly different).
p-value by one-way ANOVA or t-test.

Table 5. Mediating Effect of Organizational Commitment between Self-Leadership and Quality of Medical Services of the Study Subjects (n=341)

Model	Factor	β	t	F	R ²	Adjusted R ²
1	Self-leadership →Organizational commitment	0.497	10.551***	111.320***	0.247	0.245
2	Self-leadership →Quality of medical services	0.599	13.783***	189.966***	0.359	0.357
3	Self-leadership →Quality of medical services Organizational commitment →Quality of medical services	0.424 0.353	9.142*** 7.601***	139.782***	0.453	0.449

*p<0.05, **p<0.01, ***p<0.001 by multiple regression analysis.

education experience and leadership education place (p<0.05, p<0.01) among the study subjects.

5. Mediating effect of organizational commitment between self-leadership and quality of medical services of the study subjects

The effect of self-leadership on organizational commitment (β=0.497, t=10.551, p<0.001) and quality of medical services (β=0.599, t=13.783, p<0.001), as well as the effect of organizational commitment on the quality of medical services (β=0.353, t=7.601, p<0.001) were all

significant, thus satisfying the basic assumptions confirming the mediating effect.

However, when organizational commitment was input, the effect of self-leadership on the quality of medical services decreased, but it was still significant (β=0.424, t=9.142, p<0.001), which explains the partial mediating effect of organizational commitment. To verify the significance of the partial mediating effect, a Sobel test was run and the results showed that the partial mediating effect was significant at Z=6.203 and p<0.001 (Table 5).

Discussion

1. Interpretation

Dental medical institutions have reported that it is important to effectively manage the human resources that provide services directly to patients to improve the quality of medical services²⁶⁾. Dental hygienists comprise the largest portion of organization members in dental institutions, directly affecting efficiency and productivity, and improving the quality of dental hygiene. Therefore, they are in an important position in determining the productivity of the dental community and the quality of medical services. This study analyzes the self-leadership, organizational commitment, and quality of medical services of dental hygienists and provides basic data for the organizational commitment to and necessity and improvement of the quality of medical services.

2. Comparison with previous studies

The dental hygienists' average self-leadership score was 3.95, and among the sub-factors, self-compensation was the highest at 4.14. In Lee and Kun's¹⁸⁾ study on dental hygienists, self-compensation was 3.84, and in Seomun's⁴⁾ study on nurses, self-compensation was 3.74, which are consistent with the results of this study. Therefore, self-rewarding requires autonomous effort to set goals and aspirations. Emphasizing autonomy and self-reward through self-rewarding programs can increase the efficiency of dental hygienists' work and increase self-leadership.

Regarding the degree of self-leadership based on the general characteristics of dental hygienists was highest, when the main task was in the counseling. Ku et al.¹⁹⁾ reported that when dental hygienists gain experience in the clinical field and have expertise in their work, they become in-charge of the counseling room and improve their work performance, thereby increasing self-leadership. Counseling work increases dental hygienists' opportunities to show immediate problem-solving skills and leadership while communicating closely with patients. Therefore, through the process of goal self-setting and achievement toward improving work performance, self-leadership in the hospital can be demonstrated, and we believe it is necessary to educate and train self-leadership that can improve work expertise of dental hygie-

nists and cultivate self-directed ability.

Regarding the degree of organizational commitment based on the general characteristics of dental hygienists, it was found to be high for the under 30~34 age groups, and when the position was higher than the department head, and the monthly income was higher than 3.5 million won. These results are consistent with those of Lee and Kun's¹⁸⁾ study of nurses, showing that as age and position increase, interest in hospital organization increases, and thereby organizational commitment increases. This can form a bond between members of the organization for younger dental hygienists in the hospital, and we believe it is necessary to increase interest in and attachment to the organization by regularly conducting programs that can improve teamwork. In addition, Ku et al.¹⁹⁾ reported that the higher the monthly income, the higher the organizational commitment because employees have pride and satisfaction in their jobs. Therefore, we believe that the hospital will not only improve dental hygienists' job performance but also increase their sense of responsibility and belonging to the organization by allowing incoming hygienists to form mentor relationships with young, experienced colleagues.

Regarding the degree of organizational commitment and quality of medical services based on the general characteristics of dental hygienists, it was found that the quality of medical services was high when education was at graduate level or higher. This is consistent with the results of Park and Park's²⁷⁾ study of nurses, showing that the degree of organizational commitment was highest when the level of education was graduate or higher. In addition, according to Kim et al.'s¹⁰⁾ study of nurses, if the ability to perform work is improved based on the abundant medical knowledge of nurses who continue to develop themselves, the quality of medical services will also increase. Therefore, clinical dental hygienists should devise ways to improve organizational commitment and the quality of medical services by strengthening their work expertise and focusing on the development and application of practical educational content that can drive self-development.

Depending on the personality and propensity of dental hygienists, the more extroverted and active the higher the degree of self-leadership, organizational commitment, and

quality of medical services. The results of this study are consistent with those of Cho et al.²⁸⁾ that extroverted and active people cooperate with members of the organization to show active communication and activism, reflecting positively on work that requires active exchange between doctors and patients. The more extroverted and active people are, the more likely they are to have positive thoughts and actively attempt to solve difficult situations rather than view them as obstacles. Therefore, members of hospitals and dental organizations should encourage and support the engagement and activities of extroverted and active people. It should be recognized that introverts and passive people do not fit in with community life but that individual propensities are different. Moreover, if a workshop program focused on cultivating members' communication and understanding is conducted in dental hospitals, cooperation can be strengthened and it can have a positive effect on work performance and the quality of medical services provided to patients.

Self-leadership, organizational commitment, and quality of medical service were high when dental hygienists had experience in leadership education. The results of this study are consistent with those of Kim's²⁹⁾ study of nurses who received leadership education and had higher self-leadership. Similarly, Shin and Park's³⁰⁾ study systematically demonstrates how the composition and organization of leadership education systems in hospitals have a major impact on medical performance. The experience of participating in leadership education influences organizational commitment because it is thought that becoming the owner of a task and performing it confidently has a positive effect on the organization's performance. Therefore, it is necessary for hospitals to develop appropriate leadership education activities and increase such initiatives that can effectively stimulate dental hygienists' full potential.

As a result of verifying the mediating effect of organizational commitment between self-leadership and the quality of medical services of dental hygienists, it was found that organizational commitment had a partial mediating effect. Thus, dental hygienists with a high level of self-leadership show improved organizational commitment and quality of medical services. These results are similar to those of Koh³¹⁾ and Kim et al.¹⁰⁾, respectively indicating

that individuals exhibiting self-leadership showed a high level of organizational commitment to the team or organization, and that self-leadership improves the quality of medical services. These findings emphasize the importance of self-leadership in achieving its own goals. Dental hygienists with high self-leadership are expected to successfully perform their tasks to improve the quality of medical services and contribute to organizational performance and commitment. Therefore, dental hospitals should consider it necessary to provide self-leadership reinforcement programs and improve the environment such that self-directed goals can be set.

3. Limitations

One limitation of this study is that the research subjects were limited to the Seoul and Gyeonggi regions of Republic of Korea, limiting the generalizability of the research findings. Thus, future studies should expand the research area nationwide. It is also necessary to expand the scope of research in the future to understand the effect of self-leadership on organizational commitment and the quality of medical services using various survey methods, such as interview surveys.

4. Conclusion

This study confirmed that the self-leadership of dental hygienists is an important factor influencing organizational commitment and the quality of medical services. It was found that the behavior of positively exerting influence on oneself affects the organization's goals and performance, and the quality of medical services provided to patients also improves. Therefore, hospitals can improve the quality of medical services by increasing organizational commitment through an organizational culture that supports dental hygienists in exercising self-leadership.

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 Eulji University (IRB:EUIRB2022-014).

Author contributions

Conceptualization: Hee-Jung Lim. Data acquisition: all the authors. Formal analysis: all the authors. Funding: Hee-Jung Lim and Do-Seon Lee. Supervision: Hee-Jung Lim and Do-Seon Lee. Writing—original draft: all the authors. Writing—review & editing: Hee-Jung Lim. All authors approved the final manuscript.

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