

# Differences in Career Decision Self-Efficacy according to the Motives for Major Selection among Dental Hygiene Students

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**Background:** The purpose of this study was to confirm the major motivation for and self-efficacy of career decisions among dental hygiene students and to analyze differences in career decision self-efficacy according to the major motivation.

**Methods:** An online survey was conducted among 194 dental hygiene students. To investigate career decision self-efficacy, 18 questions were posed, including 5 questions on future planning, 4 questions on self-evaluation, 4 questions on job information collection, 3 questions on goal setting, and 2 questions on problem solving. The survey was conducted using a 5-point scale.

**Results:** The motives for choosing a major were a high employment rate (68.6%), a desire to become a professional (36.1%), according to aptitude (27.8%), recommendations by others (26.3%), and according to grades (12.9%). The career decision self-efficacy of the study participants was in the order of self-evaluation factors (3.75 points), problem solving factors a (3.62 points), job information collection factors (3.59 points), future planning factors (3.46 points), goal setting factors (3.44 points) score was high. The career decision self-efficacy scores were higher when the major motivation was “because I want to become a professional” and “because I think I have an aptitude for it.”

**Conclusion:** It is necessary to give students who wish to major in dental hygiene an opportunity to consider whether they have an aptitude for it by providing information on not only major subjects but also the duties and roles of dental hygienists. In addition, it is necessary to develop a career education program to help dental hygiene students set their career goals.

**Key Words:** Dental clinics, Dental hygienists, Students

## Introduction

### 1. Background

Career decision-making is an occupational activity that determines the direction of a career, and choosing a career path is an essential process in life, given that it is a step towards self-fulfillment<sup>1)</sup>. Career decision-making during the undergraduate period is an important task; students build their competence in their specialty and assess jobs that suit their aptitude and interests. However, there may be difficulties in career decision-making if a student has a university entrance-oriented education and does not sufficiently explore his or her aptitudes and abilities. It has been

shown that South Korean university students experience the psychological burden of career decision-making<sup>2,3)</sup>.

Individual characteristics and social and psychological factors<sup>4)</sup> influence career decision-making, and career decision-making self-efficacy is reported to significantly influence satisfactory career decision-making<sup>5)</sup>. Career decision-making self-efficacy refers to the confidence to successfully prepare, plan, execute, and evaluate career decision-making<sup>6)</sup>, and is related to problem-solving ability<sup>7)</sup>, career motivation<sup>8)</sup>, career preparation behavior<sup>9)</sup>, and satisfaction with major<sup>10)</sup>.

Students of dental hygiene have reported relatively low satisfaction with major compared to undergraduates of other

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health specialties<sup>11-13</sup>). Such phenomenon may be because the dental hygiene students' university entrance motivation is mainly related to the high employment rate<sup>14</sup>). Some students may have entered university without concern for their aptitude and interest. That is, university entrance motivation affects satisfaction with major<sup>15</sup>), and considering that satisfaction with major affects career decision-making self-efficacy<sup>16</sup>), it is necessary to examine the differences in career decision-making self-efficacy according to entrance motivation among dental hygiene students.

Among the previous studies that investigated career decision-making self-efficacy in dental hygiene students, Son et al.<sup>16</sup>) reported that there is a difference in career decision-making self-efficacy depending on university entrance motivation. Another previous study<sup>17,18</sup>) reported that learning immersion, academic satisfaction, grades, and finding employment in the desired career field are related to career decision-making self-efficacy. Furthermore, Bea et al.<sup>19</sup>) reported that career decision-making self-efficacy has a positive impact on career preparation behavior. However, there are insufficient recent studies that report career decision-making self-efficacy according to university entrance motivation among dental hygiene students, and it is challenging to find studies that examine each area of career decision-making self-efficacy according to entrance motivation.

## 2. Objectives

The present study aimed to investigate the differences in career decision-making self-efficacy according to the university entrance motivation of dental hygiene students. To this end, the entrance motivation according to the general characteristics was identified, and any score differences in each area of career decision-making self-efficacy according to the entrance motivation were analyzed.

## Methods

### 1. Ethics statement

This study was conducted after obtaining the approval of the Shinhan University Research Ethics Review Board (SHIRB-202202-HR-152-02).

### 2. Study design

The target population's general characteristics, university entrance motivation, and career decision-making self-efficacy were collected using an online survey. Eighteen items from a preliminary study on undergraduates<sup>20</sup>) selected through an exploratory factor analysis were used in the survey to investigate career decision-making self-efficacy.

### 3. Sample size

For approximately four months, beginning in February 2022, 194 students of the department of dental hygiene across South Korea participated in the online survey. A convenience sampling method was used for participant recruitment, and only those who understood the study's purpose and consented to participate in the survey were selected as participants. One hundred ninety-four participants were derived based on the calculation for the minimum sample size required for the t-test with a significance level of 0.05, an effect size of 0.5, and a power of 95% using the G \* Power 3.1 for Windows.

### 4. Intervention

The participants' general characteristics examined were sex, educational system, and year of study. University entrance motivation was investigated by classifying it into the prospect of easily finding employment, becoming a specialist, a prospect of the major suiting one's aptitude well, recommendation by others, and based on the results of the entrance examination<sup>14</sup>). A questionnaire of which the validity was verified in a prior study<sup>20</sup>) was to explore career decision-making self-efficacy. It consisted of five questions on future planning, four on self-evaluation, four on collecting occupational information, three on goal setting, and two on problem-solving. The career decision-making self-efficacy questionnaire items were rated on a five-point scale. The Cronbach's alpha value of the 18 items on the career decision-making self-efficacy questionnaire was 0.898.

### 5. Statistical methods

Frequency analysis was performed on the participants' general characteristics, and the differences in university entrance motivation according to the general characteristics

were analyzed using a chi-squared test. Career decision-making self-efficacy was analyzed using descriptive statistics, and the differences in career decision-making self-efficacy scores according to entrance motivation were analyzed using the t-test. Statistical analysis was performed using the SPSS 26.0 program (IBM Corp., Armonk, NY, USA) with a significance level set to 0.05.

## Results

### 1. General characteristics

Regarding the general characteristics of the study participants, 90.7% of the participants were female. Fifty percent of the participants were in the first and second

years of their study, and the other half were in their third and fourth years (Table 1). The most common university entrance motivation was the prospect of easily finding employment (68.6%), followed by becoming a specialist (36.1%), a prospect of the major suiting one's aptitude well (27.8%), recommendation by others (26.3%), and based on the results of the entrance examination (12.9%) (Table 2).

### 2. Entrance motivation according to general characteristics

Thirty-three percent of the third-year students and 19.1% of the fourth-year students reported recommendation by others as the entrance motivation, which was significantly different ( $p < 0.05$ ) (Table 2).

### 3. Career decision-making self-efficacy of the study participants

The area of career decision-making self-efficacy in which participants scored the highest was self-assessment (3.75), followed by problem-solving (3.62), occupational information collection (3.59), future planning (3.46), and goal setting (3.44).

The items with the highest ratings were: "I am aware of the lifestyle I want (3.99)," "I can choose a job from the

**Table 1.** General Characteristics

Variable	Value	
Sex	Male	18 (9.3)
	Female	176 (90.7)
School system (y)	3	100 (51.5)
	4	94 (48.5)
Grade	1~2	97 (50.0)
	3~4	97 (50.0)
Total	194 (100)	

Values are presented as number (%).

**Table 2.** Admission Motivation according to General Characteristics

Variable	The motives for choosing a major, n=agree to need <sup>†</sup>				
	Desire to become a professional	According to aptitude	High employment rate	Recommendations by others	According to grades
Sex					
Male	7 (38.9)	6 (33.3)	10 (55.6)	6 (33.3)	2 (11.1)
Female	63 (35.8)	48 (27.3)	123 (69.9)	45 (25.6)	23 (13.1)
p-value	0.801	0.784	0.285	0.574	> 0.999
School system (y)					
3	40 (40.0)	24 (24.0)	68 (68.0)	33 (33.0)	11 (11.0)
4	30 (31.9)	30 (31.9)	65 (69.1)	18 (19.1)	14 (14.9)
p-value	0.295	0.262	0.878	0.034	0.521
Grade					
1,2	40 (41.2)	29 (29.9)	68 (70.1)	28 (28.9)	10 (10.3)
3,4	30 (30.9)	25 (25.8)	65 (67.0)	23 (23.7)	15 (15.5)
p-value	0.178	0.631	0.757	0.514	0.392
Total	70 (36.1)	54 (27.8)	133 (68.6)	51 (26.3)	25 (12.9)

Values are presented as number (%).

<sup>†</sup>Duplicate response.

p-values were analyzed using chi-squared test.

group of jobs I have in mind (3.78),” “I can decide what my ideal job is (3.77),” and “I can choose a career path that suits my desired lifestyle (3.77).” On the other hand, the ratings of the following items were low, lower than the mean score of all items (3.57): “I can write a good resume (3.19),” “I am able to not worry about career decisions after I have decided on a career path (3.24),” “I can find information related to graduate schools or professional education institutions (3.34),” and “I can decide what steps to take if I have academic problems related to my chosen major (3.38).” (Table 3).

#### 4. Differences in career decision-making self-efficacy scores based on entrance motivation

Career decision-making self-efficacy scores in the areas of future planning, occupational information collection, and goal setting were significantly higher in those whose university entrance motivation was becoming a specialist

or a prospect of the major suiting one’s aptitude well compared to those who did not have the above entrance motivations ( $p < 0.05$ ). On the other hand, there was no significant difference in career decision-making self-efficacy scores between those who reported their entrance motivation as a prospect of easily finding employment, recommendation by others, and based on the results of the entrance examination and those who did not (Table 4).

## Discussion

### 1. Key results

This study investigated university entrance motivation and career decision-making self-efficacy among students of the department of dental hygiene and confirmed that career decision-making self-efficacy varies according to university entrance motivation. The highest entrance motivation of dental hygiene students was the prospect of easily finding employment (68.6%), followed by becoming

**Table 3.** Career Decision Self-Efficacy of Dental Hygiene Students

Questions	Value
1. Future planning	3.46±0.63
1) I can write a resume well.	3.19±0.84
2) I can successfully complete the procedures related to the job interview.	3.41±0.80
3) I can decide what steps to take if I have an academic problem with my chosen major.	3.38±0.83
4) I can find out what steps are necessary to successfully complete my chosen major.	3.70±0.82
5) I can continue to perform work for my major or career goal even in difficult life.	3.62±0.75
2. Self-evaluation	3.75±0.60
1) I know what lifestyle (lifestyle) I want.	3.99±0.73
2) I can clearly evaluate my abilities.	3.58±0.75
3) I can distinguish between what kind of sacrifices I can make and what I cannot make to achieve my career goals.	3.68±0.77
4) I can decide what my ideal job would be.	3.77±0.83
3. Job information collection	3.59±0.61
1) I can find information related to graduate schools or specialized educational institutions.	3.34±0.90
2) I can choose one job I want from among the jobs I have in mind.	3.78±0.82
3) I can talk to people who are already employed and working in fields I am interested in.	3.45±1.00
4) I can choose a career path that fits my desired lifestyle.	3.77±0.78
4. Goal setting	3.44±0.74
1) After I have decided on a career path, I may not be concerned about that decision.	3.24±1.01
2) You can choose a major or career that suits your interests or interests.	3.68±0.80
3) I can make plans for the next 5 years.	3.59±0.98
5. Problem solving	3.62±0.82
1) If you are not satisfied with your first job, you can change it.	3.59±0.99
2) I can find a reasonable alternative or other career path if I cannot get the major or job I want the most.	3.65±0.86
Total	3.57±0.52

Values are presented as mean±standard deviation.

**Table 4.** Differences in Career Decision Self-Efficacy according to the Motive for Choosing a Major

Variable	Career decision self-efficacy score					
	Total	Future planning	Self-evaluation	Job information collection	Goal setting	Problem solving
The motives for choosing a major						
Desire to become a professional						
Yes	3.70±0.47	3.59±0.61	3.86±3.69	3.73±0.56	3.59±0.72	3.74±0.78
No	3.49±0.53	3.39±0.63	3.69±0.58	3.51±0.62	3.35±0.73	3.55±0.83
p-value	0.009	0.034	0.054	0.015	0.035	0.120
According to aptitude						
Yes	3.72±0.53	3.69±0.66	3.84±0.61	3.73±0.57	3.67±0.72	3.67±0.78
No	3.51±0.50	3.37±0.60	3.72±0.60	3.53±0.61	3.35±0.72	3.60±0.78
p-value	0.009	0.002	0.227	0.043	0.007	0.632
High employment rate						
Yes	3.54±0.54	3.43±0.63	3.74±0.64	3.57±0.63	3.39±0.73	3.58±0.84
No	3.62±0.45	3.51±0.63	3.77±0.52	3.62±0.56	3.54±0.74	3.71±0.77
p-value	0.324	0.430	0.746	0.600	0.188	0.291
Recommendations by others						
Yes	3.47±0.52	3.35±0.61	3.62±0.58	3.49±0.64	3.37±0.72	3.62±0.73
No	3.60±0.51	3.50±0.63	3.80±0.60	3.62±0.59	3.46±0.74	3.62±0.85
p-value	0.134	0.162	0.056	0.194	0.413	0.970
According to grades						
Yes	3.63±0.48	3.50±0.63	3.83±0.57	3.72±0.52	3.33±0.78	3.80±0.79
No	3.56±0.52	3.45±0.63	3.74±0.91	3.57±0.62	3.45±0.73	3.59±0.82
p-value	0.522	0.701	0.499	0.234	0.447	0.243

Values are presented as number (%).  
p-values were analyzed using t-test.

a specialist (36.1%), a prospect of the major suiting one’s aptitude well (27.8%), recommendation by others (26.3%), and based on the results of the entrance examination (12.9%). The area of career decision-making self-efficacy the participants scored the lowest on was goal-setting (3.44). Those who responded that their entrance motivation was becoming a specialist or a prospect of the major suiting one’s aptitude well had higher mean scores across all areas of career decision-making self-efficacy than those who did not.

## 2. Interpretation

In this study, the prospect of easily finding employment was the most common university entrance motivation of dental hygiene students at 68.6% (Table 2), which was consistent with Lee and Kim<sup>14)</sup>, and Jang et al.<sup>21)</sup> studies that reported the highest entrance motivation for the department of dental hygiene in the order of high employment

rate and salary, becoming a specialist, suiting one’s aptitude and interest, and recommendation by others. Unemployment among young people is an important issue in our society, and dental hygienists are thought to enter the department of dental hygiene expecting a high employment rate because obtaining a medical technologist license is less difficult than other occupations. The 36.1% response rate of becoming a specialist in the present study was higher than those reported in the previous studies (12.6%<sup>14)</sup> and 21.1%<sup>21)</sup>). Based on these results, it can be assumed that the professional image of dental hygienists has improved compared to that of the past. However, given that the entrance motivation regarding employment is still high, the role of dental hygienists as oral health care specialists needs to be promoted.

The dental hygiene students’ mean scores in career decision-making self-efficacy areas ranged from 3.44 to 3.75 (Table 3). In a 2014 study by Bea et al.<sup>19)</sup>, dental

hygiene undergraduates scored 3.5 to 3.8 points in each area of career decision-making self-efficacy, which was lower than that of other health students. Because the higher the career decision-making self-efficacy, the higher the satisfaction with the major and its impact on active career preparation behaviors<sup>22,23</sup>, it is vital to have a high career decision-making self-efficacy. In particular, the lowest mean score among the career decision-making self-efficacy areas was that of goal-setting at 3.44 points, and the item with the lowest mean score among all items was “I can write a good resume” at 3.19 points. In other words, since the entrance motivation of the dental hygiene students is mainly based on the consideration of employment, it is likely that they lacked the opportunity to contemplate their aptitude and suitability for the major deeply, which translates into a lack of confidence in their future career choices. There is a need for career education programs to help students set career goals in the department of dental hygiene because clear goal setting has a positive impact on active job readiness and good job attainment<sup>24</sup>. Furthermore, providing resume writing training or coaching through such programs is expected to help students feel more confident in applying for occupations in the field they desire after graduation and improve their career decision-making self-efficacy.

In the present study, those who responded that their university entrance motivation was becoming a specialist or a prospect of the major suiting one’s aptitude well were more likely to score higher on average across all areas of career decision-making self-efficacy than those who did not, and the mean scores were significantly higher in the areas of future planning, occupational information gathering, and goal-setting ( $p < 0.05$ ; Table 4). Considering that the motivation for selecting a major affects occupational value, satisfaction with the major, and job preparation behaviors<sup>25</sup>, there is a high probability of having an intrinsic occupational value if the motivation for selecting a major is intrinsic motivation. This, in turn, is thought to positively affect high levels of satisfaction with the major, active job preparation behaviors, and career decision-making self-efficacy. Intrinsic occupational value refers to valuing one’s aptitude and the occupation itself, and extrinsic occupational value is a value that considers eco-

nomonic stability and social awareness as important<sup>5</sup>. Prior research<sup>26</sup> has reported that the higher the intrinsic occupational value, the better the career decision-making self-efficacy. Considering that university entrance motivation has a high proportion of extrinsic value in the case of dental hygiene students, it is necessary to provide students who wish to major in dental hygiene with information not only regarding the curriculum of their major but also on the work and role of dental hygienists so that they can deliberate whether the occupation is a good match for their aptitude.

### 3. Limitations

The representative nature of the current study is limited due to convenience sampling in participation selection. The impact of entrance motivation on career decision-making self-efficacy was impossible because a variety of variables affecting career decision-making self-efficacy, such as demographic characteristics, academic performance, and satisfaction with major, were not considered.

### 4. Generalizability

This study is significant in that it found that career decision-making self-efficacy is higher than if intrinsic value is considered in motivation for entrance to the department of dental hygiene. That is, if one enters the department of dental hygiene with a sense of purpose as an oral health care specialist by understanding one’s aptitude and suitability for the major, it will have a positive impact on career preparation behaviors for employment because the person becomes confident in his or her career decision-making.

### 5. Suggestions

Dental hygiene students’ score on the goal-setting area among the career decision-making self-efficacy areas was relatively low. To improve this area, students need a career program that substantially helps them reflect on themselves and determine their career direction. For instance, providing opportunities to experience work in various fields of dental hygiene before graduation through curriculum or internship and to consider a career path that matches students’ aptitude will enable students to set goals for their

career path more clearly. In addition, to help students who wish to major in dental hygiene select a major with an emphasis on intrinsic motivation, it is necessary to further promote the social role of oral health care specialists, along with information regarding the role and work of dental hygienists in departments of dental hygiene and the association-related organizations.

## Notes

### Conflict of interest

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

### Ethical approval

The study was approved by the Institutional Review Board of Shinhan University (IRB No. SHIRB-202202-HR-152-02).

### Author contributions

Conceptualization: Bo-Young Park and Mi-Sook Yoon. Data acquisition: Bo-Young Park and Mi-Sook Yoon. Formal analysis: Bo-Young Park and Mi-Sook Yoon. Supervision: Mi-Sook Yoon. Writing-original draft: Bo-Young Park and Mi-Sook Yoon. Writing-review & editing: Bo-Young Park and Mi-Sook Yoon.

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### Data availability

The datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

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