

The Effect of Self Efficacy and Satisfaction of Major on the Professionalism of Dental Hygiene Students*

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ABSTRACT

This study has examined the self efficacy, satisfaction of major, and the professionalism of dental hygiene students, and to specify and articulate the factors which influence professionalism, conducted a self entry questionnaire survey with 3rd and 4th year students of the dental hygiene department in Seoul and Gyeonggi-do, and used and analyzed the final 184 copies by using the SPSS 21.0 program (IBM SPSS Statistics, New York, USA). The average self efficacy of the research subjects was 3.79, while the average satisfaction of major was 3.88, and the average professionalism was 3.70 ± 0.56 . As for the professionalism according to the general characteristics, the 4th year students had 3.84, which was higher than the 3rd year students, and it turned out that the higher the satisfaction of major and satisfaction of practice, the higher the professionalism. As a result of the regression analysis performed to find out the factors influencing the professionalism of the research subjects, it turned out that the self efficacy and the satisfaction of major have had a statistically significant effect on the professionalism. Based on the results in the above, it was confirmed that the higher the self efficacy and the satisfaction of major, the more positive the effect on the professionalism. Hence, various educational programs would be further needed to improve the dental hygiene and the students' professionalism, and the continuous education will be required to ensure that the confidence and satisfaction gained via such experiences are led to the positive professionalism.

1. Introduction

In the recently rapidly evolving field of health care, the role and work of dental hygienists are becoming even more specialized as the medical consumers' demand for quality medical care has further increased, and the social expectation for dental hygiene professionals has also grown in the field of dental hygiene (Ahn & Song, 2015). A dental hygienist is a professional worker who systematically plans, executes, and manages a series of oral health care activities such as oral disease

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prevention, dental treatment support, and oral health education for the purposes of maintaining and improving the oral health of the general public (Kang et al., 2018). Professional workers recognize their occupation as a profession and also have a professionalism which perceives related activities as professional, and through which, while maintaining a certain attitude towards their work, a sense of vocation, a sense of service and activities of self control in pursuit of the public interest are carried out. Such professionalism begins to form during the period of receiving professional education and is also established through the process of connecting theories and practice during the clinical practice based on their major related knowledge (Keeling & Templeman, 2013). The dental hygiene related professionalism refers to a systematic view of dental hygiene and the occupational consciousness for the relevant position in the process of conducting the dental hygiene management (Jang & Moon, 2016), and it ought to be treated as important in the educational process for the students majoring in dental hygiene, and it also apparent that it is among the learning outcomes.

Examining the previous studies on the professionalism (Cho & Paik, 2004; Ha & Choi, 2011), those conducted on the nursing students focused on their professional self concept, professional socialization, self esteem, satisfaction of clinical practice, self efficacy, clinical performance ability, satisfaction of major, and sociability for analysis, and it has been reported that such factors are important factors for establishing the professionalism of the nursing students. In particular, it was reported that the nursing students' professional self concept has a correlation between the satisfaction of major in nursing and the self efficacy. It was also claimed that the professionalism has the property of being formed while students receive the professional education, which continues to develop (Schank & Weis, 2001). That is, the professionalism may be formed based on the basic education of college or university, and the professionalism of the dental hygiene students ought to be formed through the dental hygiene theory and practice to further develop the professionalism as the future dental hygienists.

Furthermore, self efficacy refers to self confidence in one's own abilities and effectiveness, that is, a one's belief in one's self which is required to successfully carry out the behaviors needed to achieve a result, involving motivation or human resources as well as a series of activities as a matter of comprehensive judgement (Bandura, 1986). It has been reported that the higher the self efficacy, the greater the academic performance and the positive effect on the organizational socialization (Park et al., 2002).

Satisfaction of major is the same concept as satisfaction of department, and it is a judgement process which evaluates the department with which one is currently affiliated by comparing it with the criteria for career or occupation set by an individual. When the satisfaction with one's major is significant, one's thoughts and attitudes towards a career become more mature (Han, 2013). Furthermore, it has been reported that when the satisfaction of major is large, the stress caused during clinical practice is small and has a positive effect on the career and professionalism (Moon & Lee, 2010).

Hence, in this study, among the variables reported to have an impact on the professionalism, self efficacy and the satisfaction of major as the internal factors of dental hygiene (academics) which can be improved through dental hygiene education and are closely related to the professionalism were sought to be verified. Accordingly, this study was conducted by examining self efficacy, satisfaction of major, and professionalism for the 3rd and 4th year students of dental hygiene in Seoul and Gyeonggi-do, and by identifying the factors which influence the professionalism, it was

sought to provide the basic data required for planning specific ways to help the dental hygiene students to have the professionalism with a positive attitude.

2. Research Method

2.1 Research Subjects

This study was conducted for convenience and extraction from 3rd and 4th year students enrolled in the dental hygiene department in Seoul and Gyeonggi-do from June 10, 2021 until June 31, 2021, and the purpose and preparation method of the study were adequately explained, after which the students who agreed to participate completed the questionnaire in the form of self entry. A total of 200 people were surveyed, and 184 people, excluding 16 who had insufficient responses, were selected for the final analysis.

2.2 Research Tools

The research tools used for this study were consisted of a total of 65 questions including 5 for the general characteristics, 23 for self efficacy, 18 for satisfaction of major, and 18 for the professionalism, respectively.

2.2.1 Self efficacy

Self efficacy was used by modifying and supplementing the tools used by Hong (Hong, 1995), and was consisted of general self efficacy (11 questions) and social self efficacy (12 questions) as sub areas. Responses were provided on a 5-point Likert scale from 1 point of ‘Absolutely not’ to 5 points for ‘Absolutely,’ with higher scores indicating higher self efficacy. In this study, as for the reliability, the Cronbach’s $\alpha = 0.744$ was obtained.

2.2.2 professionalism

As for the professionalism, 29 questions developed by Yeun et al. (Yeun et al., 2005) were revised and supplemented for use with 18 questions reduced by Kim (Kim, 2012) by validating the construct validity through the factor analysis. This tool was consisted of 5 sub areas of professional self concept (6 questions), social awareness (5 questions), professionalism of dental hygiene (3 questions), role of the dental hygiene system (2 questions), and independence of dental hygiene (2 questions), and on a 5-point scale, the higher the score, the higher the professionalism regarding dental hygiene, and the reliability of the Cronbach’s $\alpha = 0.840$ was obtained for this study.

2.2.3 Satisfaction of major

As for the satisfaction of major, 18 questions related to the satisfaction of major were revised and supplemented for use by Lee (Lee, 2004) in the Program Evaluation Survey developed at and by the University of Illinois in the United States. This tool was consists of the 4 sub areas

of general satisfaction (6 questions), satisfaction of social perception (6 questions), satisfaction of academic subject (3 questions), and satisfaction of relationship (3 questions), and on a 5-point scale, the higher the score, the higher the satisfaction of major. In this study, as for the reliability, the Cronbach's $\alpha = 0.852$ was obtained.

2.3 Analytical Method

As for the statistical analysis of the data collected, the SPSS 21.0 program (IBM SPSS Statistics, New York, USA) was used, and the significance level of the statistical test was set to $\alpha = 0.05$. The frequency analysis was performed for the general characteristics of the research subjects, and the key variables of self efficacy, satisfaction of major, and professionalism were treated with descriptive statistics. Independent sample T-test and one-way ANOVA were performed to examine self efficacy, satisfaction of major, and professionalism according to general characteristics, and as for the statistically significant group, Scheffé was used as a post hoc test. The Pearson's correlation analysis was performed for the correlation between self efficacy, satisfaction of major, and professionalism, and the multiple regression analysis was performed to examine the factors influencing the professionalism.

3. Results

3.1 General Characteristics of Research Subjects

As for the grade years of the subjects, 3rd year students accounted for 56.5% and 4th years students were 43.5%, and "Academic achievement is low" turned out to be 30.4%, while "Average" 40.2%, and "High" turned out to be 29.3%, respectively. As for the satisfaction of major, it turned out that "Dissatisfied" was 4.9%, "Average" 23.9%, and "Satisfied" was 71.2% satisfied, while for the satisfaction of clinical practice, "Dissatisfied" was 11.4%, "Average" 34.8%, and "Satisfied" was 53.8%, respectively Table 1.

Table 1. General characteristic of the subjects

Characteristics	Division	N	%
Grade	3rd	104	56.5
	4th	80	43.5
Academic achievement	Low	56	30.4
	Average	74	40.2
	High	54	29.3
Major satisfaction	Dissatisfied	9	4.9
	Average	44	23.9
	Satisfied	131	71.2
Clinical practice satisfaction	Dissatisfied	21	11.4
	Average	64	34.8
	Satisfied	99	53.8
Total		184	100.0

3.2 Self Efficacy, Satisfaction of Major, and professionalism of the Research subjects

The overall average of the self efficacy of the subjects turned out to be 3.79 ± 0.56 , and by sub area, the general self efficacy was 3.84 ± 0.55 and the social self efficacy was 3.75 ± 0.81 , respectively. The average satisfaction of major turned out to be 3.88 ± 0.60 , and by sub area, it was 4.05 ± 0.68 for the satisfaction of perception, 3.89 ± 0.73 for the satisfaction of relationship, 3.83 ± 0.75 for the general satisfaction, and 3.78 ± 0.74 for the satisfaction of academic subject, respectively. The average for the dental hygiene professionalism turned out to be 3.70 ± 0.56 , and for each sub area, self concept turned out to be 4.08 ± 0.64 , role of dental hygiene 4.00 ± 0.73 , professionalism of dental hygiene 3.90 ± 0.74 , social awareness 3.26 ± 0.78 , and the independence of dental hygiene was 3.04 ± 0.42 points, respectively Table 2.

Table 2. Self-efficacy, major satisfaction and professionalism of the subjects

Variables	Mean	SD
Self-efficacy	3.79	0.56
General self-efficacy	3.84	0.55
Social self-efficacy	3.75	0.81
Major satisfaction	3.88	0.60
General satisfaction	3.83	0.75
Recognition satisfaction	4.05	0.68
Course satisfaction	3.78	0.74
Relation satisfaction	3.89	0.73
Professionalism	3.70	0.56
Self-concept of the profession	4.08	0.64
Social awareness	3.26	0.78
Professionalism of dental hygiene	3.90	0.74
Roles of dental hygiene service	4.00	0.73
Originality of dental hygiene	3.04	0.42

3.3 Self Efficacy, Satisfaction of Major, and professionalism According to General Characteristics

Table 3 illustrates self efficacy, satisfaction of major, and professionalism according to the general characteristics. Examining the self efficacy, when the satisfaction of major was ‘Satisfied’, it turned out to be high at 3.92 ± 0.53 , demonstrating such a significant difference between ‘Dissatisfied’ and ‘Average’ ($p < 0.001$). As for the satisfaction of major, the 4th year students had 4.08 ± 0.57 points by grade year, which turned out to be higher than the 3rd year students with 3.75 ± 0.57 points ($p < 0.001$), while for the satisfaction of practice, ‘Satisfied’ turned to be high at 4.11 ± 0.53 points, and there was a significant difference with ‘Dissatisfied’ and ‘Average’ ($p < 0.001$). Examining the professionalism, the 4th year students by grade year turned out to be have 3.84 ± 0.53 points, which was higher than the 3rd year students with 3.59 ± 0.55 points ($p < 0.01$), while the greater the satisfaction of major ($p < 0.001$), the satisfaction of practice also turned out to be greater ($p < 0.001$).

Table 3. Career preparation behavior according to general characteristics

Characteristics		Self-efficacy		Major satisfaction		Professionalism	
		Mean±SD	<i>p</i> *	Mean±SD	<i>p</i> *	Mean±SD	<i>p</i> *
Grade	3rd	3.75±0.53	0.350	3.75±0.57	<0.001	3.59±0.55	0.002
	4th	3.83±0.58		4.08±0.57		3.84±0.53	
Academic achievement	Low	3.67±0.61	0.107	3.73±0.67	0.115	3.59±0.54	0.242
	Average	3.80±0.55		3.98±0.59		3.76±0.61	
	High	3.89±0.46		3.91±0.49		3.72±0.50	
Major satisfaction	Dissatisfied	3.21±0.52 ^a	<0.001	3.02±0.20 ^a	<0.001	2.98±0.60 ^a	<0.001
	Average	3.51±0.46 ^a		3.39±0.43 ^b		3.29±0.46 ^a	
	Satisfied	3.92±0.53 ^b		4.11±0.51 ^c		3.89±0.47 ^b	
Clinical practice satisfaction	Dissatisfied	3.75±0.44	0.285	3.62±0.71 ^a	<0.001	3.47±0.58 ^a	<0.001
	Average	3.63±0.56		3.62±0.52 ^a		3.54±0.49 ^a	
	Satisfied	3.89±0.55		4.11±0.53 ^b		3.85±0.56 ^b	

* by t-test for two groups and one-way ANOVA (post-test Scheffe) for three or more groups

^{a, b} The same letter indicates no significant difference by Scheffe test at $\alpha = 0.05$

3.4 Correlation Between Self Efficacy, Satisfaction of Major, and professionalism

Table 4 illustrates the correlation between self efficacy, satisfaction of major, and professionalism of the subjects. Self efficacy turned out to have a positive correlation with the satisfaction of major ($r=0.655$, $p<0.01$) and the professionalism ($r=0.622$, $p<0.01$), and the satisfaction of major turned out to have a positive correlation with the professionalism ($r=0.716$, $p<0.01$).

Table 4. Relationship between self-efficacy, major satisfaction and professionalism

Variables	Self-efficacy	Major satisfaction	professionalism
Self-efficacy	1		
Major satisfaction	0.655**	1	
Professionalism	0.622**	0.716**	1

** $p<0.01$, by Pearson's correlation analysis

3.5 Factors Influencing the Research Subjects' professionalism

In order to identify the factors which influence the subjects' professionalism, the multiple regression analysis was performed with academic achievement, satisfaction of practice, self efficacy, with the satisfaction of major as the independent variable and professionalism as the dependent variable, and consequently, the regression model was turned out to be significant ($F=46.754$, $p<0.001$), and the explanatory power of the model was 49.5%, respectively. Self efficacy ($p<0.001$) and the satisfaction of major ($p<0.01$) turned out to have a statistically significant effect on the professionalism Table 5.

Table 5. Factors affecting professionalism

Variables	B	SE	β	t	p^*
(Constant)	0.903	0.226		3.987	<0.001
Academic achievement	0.021	0.039	0.029	0.528	0.598
Clinical practice satisfaction	0.046	0.048	0.057	0.956	0.340
Self-efficacy	0.498	0.059	0.495	8.507	<0.001
Major satisfaction	0.316	0.063	0.320	5.020	<0.001

$R^2=0.505$, adj $R^2=0.495$, $F=46.754$, $p<0.001$

*by multiple regression analysis at $\alpha = 0.05$

4. Discussion

This study sought to identify the extent of the professionalism formed via the dental hygiene education for the students of the dental hygiene department, and specify and articulate the factors influencing the formation of positive professionalism among the students focusing on self efficacy and satisfaction of major, which are related to the professionalism.

Examining the self efficacy, satisfaction of major, and the professionalism related scores of the research subjects, the overall average for self efficacy was 3.79, which is similar to the result of the study of Kim (Kim, 2009) of 3.70 points, and also turned out greater than 3.21 points in the study of Ahn and Song (Ahn & Song, 2015). The average satisfaction of major turned out to be 3.88 points, and by sub area, the satisfaction of social perception turned out to be the largest with 4.05 points, followed by the satisfaction of relationship with 3.89 points, general satisfaction with 3.83 points, and the satisfaction of academic subject with 3.78 points, respectively. This is similar to the result of Ham et al. (Ham et al., 2011) where the satisfaction of major turned out to have 3.88 points and the satisfaction of perception with the highest score of 4.18. Furthermore, the study of Kim et al. (Kim et al., 2012) is similar to the result where it demonstrated the highest satisfaction of social perception among the sub areas of the satisfaction of major. This is thought to be a result of enrolling at the dental hygiene department because the profession of a dental hygienist is socially recognized as professional and the rate of employment is high.

The average for the dental hygiene professionalism turned to be 3.70 points, and by sub area, self concept turned out to have 4.08 points, role of dental hygiene 4.00 points, professionalism of dental hygiene 3.90 points, social awareness 3.26 points, and the independence of dental hygiene turned out to have 3.042 points, respectively. This is similar to the result of a study of Koh and Lee (Ko & Lee, 2015) where the average of professionalism turned out to be 3.58 points and the professional self concept was 3.88 points, which was the largest. It was apparent that the students from the department of dental hygiene had a high professional self concept of the profession as dental hygienist, while their perception of the independence of dental hygiene was low.

According to the general characteristics, the satisfaction of major by grade year turned out to have 4.08 points for the 4th year students, which were greater than those of the 3rd year students,

and for the professionalism, the 4th year students have 3.84 points, which were greater than those of the 3rd year students. As their grade year progressed, it was apparent that the satisfaction of major or the professionalism changed positively through various practical exercises and classes. Furthermore, the professionalism turned out such that the greater the satisfaction of major, the greater the satisfaction of practice. Hence, in order to have a positive effect on the professionalism, it is thought that it would be necessary to find ways to effectively increase the satisfaction of major and the satisfaction of practice above and beyond everything.

Examining the correlation between the variables, the self efficacy turned out to have a positive correlation between the satisfaction of major and the professionalism, and hence, it seemed that the greater the self-efficacy, the greater the satisfaction of major and the professionalism positively. Such results are similar to those reported by Ham et al. (Ham et al., 2011) regarding the fact that the satisfaction of major and the self efficacy were significantly correlated with the professionalism. However, in their studies, the relationship between satisfaction of clinical practice and such variables as image were presented as well. It would be meaningful to expand survey and research for such variables moving forward.

As a result of the multiple regression analysis performed to find out the factors influencing the dental hygiene related professionalism, it turned out that there was a statistically significant effect on the professionalism in the order of the self efficacy and the satisfaction of major. It turned out that the greater the self efficacy and the satisfaction of major, the more positive thoughts and attitudes are towards the professionalism.

Gathering the results in the above, the self efficacy and the satisfaction of major were verified to be the factors which positively influence the professionalism of the students of the dental hygiene department. Accordingly, in the field of education, the student guidance and education are required to positively form the professionalism, while the development of educational programs considering the satisfaction of major and the self efficacy is required. However, since the data of this study were extracted only for convenience and extraction from those available in Seoul and Gyeonggi-do, it was insufficient to represent the opinions of the students of the dental hygiene department across the nation, and only the factors related to the self efficacy, satisfaction of major, and the professionalism were identified, and hence, it is thought that it would be meaningful to demonstrate the specific effect after having the students to explore the systematic educational program.

5. Conclusion

This study examined the self efficacy, satisfaction of major, and the professionalism of the students of the department of dental hygiene, and has specified and articulated the factors which influence the professionalism, and for which a questionnaire survey was conducted in the form of self entry with the 3rd and 4th year students of the department of dental hygiene in Seoul and Gyeonggi-do regions, and as a result of analyzing the 184 final copies, the following conclusions were reached.

1. The average self efficacy of the subjects was 3.79 ± 0.56 points, the average of satisfaction

of major was 3.88 ± 0.60 points, and the average for professionalism was 3.70 ± 0.56 points, respectively.

2. The self efficacy according to the general characteristics turned out to be large with 3.92 ± 0.53 points when the satisfaction of major was achieved ($p < 0.001$), and as for the satisfaction of major, the 4th year students were greater than the 3rd year students with 4.08 ± 0.57 points for the satisfaction of major by grade year ($p < 0.001$) ($p < 0.001$), the satisfaction of the practice was high at 4.11 ± 0.53 points ($p < 0.001$). As for the professionalism, the 4th year students by grade year turned out to have 3.84 ± 0.53 points, which were greater than those of the 3rd year students ($p < 0.01$), and the greater the satisfaction of major and the satisfaction of practice, the greater the professionalism ($p < 0.001$).
3. The subjects' self efficacy turned out to be positively correlated with the satisfaction of major ($r = 0.655$, $p < 0.01$) and the professionalism ($r = 0.622$, $p < 0.01$), while the satisfaction of major turned out to be positively correlated with the professionalism ($r = 0.716$, $p < 0.01$).
4. As a result of the regression analysis performed to examine and understand the factors influencing the professionalism of the research subjects, it turned out that the self efficacy ($p < 0.001$) and the satisfaction of major ($p < 0.01$) have had a statistically significant effect on the professionalism.

Based on the results in the above, it was verified that the greater the self efficacy and the satisfaction of major, the more positive the effect on the professionalism. Hence, various educational programs are required to improve the professionalism of the students of the department of dental hygiene, and the continuous education will also be required to ensure that the confidence and satisfaction gained from such experiences will yield the positive professionalism.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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