



Influential factors in students' decision making to enter dental profession at Mahidol University

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Abstract

Objective: This study was conducted to evaluate the influential factors on a student's decision to choose dentistry as a career and to enroll in dental program at the Faculty of Dentistry, Mahidol University.

Materials and methods: The questionnaire was used to collect data from first-year dental students at Mahidol University in the academic year of 2013. It was formulated into 2 parts; 1) personal information and 2) factors influencing the decision to choose dentistry and enroll in the university. To study the influential factors on choosing dentistry, two major areas; personal reasons and vocational reasons were evaluated. The institutional factors were investigated to determine the reasons to enroll in Mahidol University. The students were asked to rate the importance of each item based on a 5-point Likert scale of 1 (not important) to 5 (very important).

Results: Out of 110 students, 99 participated in this study. Results from the personal reasoning on choosing dentistry showed that 'guidance and support from parents' had higher influence than 'good high school performance'. Regarding the vocational reason, 'job security' seems to be the predominant reason, followed by 'desire to help other people', and 'work independently'. The institution factors were ranked from the highest to the lowest mean score as faculty facilities, reputation, alumni, and scholarship availability. Sociodemographic factors that showed statistically significant effects on each influential factor were the GPAX and admission system in the mean scores of 'good high school performance', and the domicile in those of 'work independently' ($p < 0.05$).

Conclusions: Our results indicated that first-year Mahidol dental students is attracted to dentistry due to a positive perception of the work assurance, followed by the altruistic motivations of helping other people, and the ability to work independently. Additionally, the guidance and support from parents were among the important factors in the decision making.

Key words: dental education, dental students, influential factors, dentistry, decision making, dentistry

How to cite: Yimfungfieng N, Srisatjaluk R, Koohawayrojanapakorn S. Influential factors in students decision making to enter dental profession at Mahidol University. *M Dent J* 2014; 34: 330-37.

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Received: 11 June 2014

Accepted: 22 July 2014

Introduction

Many factors enter into personal decision making on a career of choice. These factors are related to social background, personal fulfillment, the nature of the occupation, working environment, job security, reputation, and financial profit. Therefore, the fundamental information about any career is very important for students in deciding the one that fit their abilities and characteristics.

Like in other countries, dentists have a significant role and position as professional healthcare workers in Thai society. In Thailand, there are currently 10 dental schools providing a 6-year dentistry program. Admission to these undergraduate programs depends on a number of factors, including, high-school grade point averages especially the grade point averages of science subjects, the standardized test scores, the admission test scores as well as the interview. Moreover, a degree of emphasis placed on these factors is differently applied by each institution and could be different in each year. Nevertheless, a high level of academic performance is necessary for students who may choose dentistry as their future career.

From 2008 to 2013, the applicants for dental undergraduate programs at Faculty of Dentistry, Mahidol University were accepted through three systems with different admission criteria and tests. The first system was the Mahidol University quota system, administered by Mahidol University; the second was direct admission, administered by the Consortium of Thai Medical Schools; and the third was the Central Admission System, administered by the Office of the Higher Education Commission. Program admissions depend on the students' rank in these systems. The total number of acceptance was 113 students per year.

Taking other schools into account, the demand for places in dental schools in Thailand much exceeds capacity available to

undergraduate dental students. Consequently, the opportunity to participate in dental education of the students is limited to a small percentage of the community. The selection of dentistry as a career is a very critical decision. Also the individual reasons for deciding on an institution of study are complex. The motivation factors for students choosing dentistry have been studied in many countries ranging from Europe¹⁻⁶, North America⁷, and Australia^{8,9}. However, those reasons may not prioritize in the same factors for Thai students because of different admission systems, socio-economic statuses and the curricula of dental schools in Thailand.

This study was therefore aimed to evaluate the influential factors on the students' decision to choose dentistry as a career and to enroll in dental program at the Faculty of Dentistry, Mahidol University.

Materials and methods

Questionnaire

Data collection was achieved by means of a self-completion questionnaire. The questionnaire was initially prepared based on the items that have been reported in previous similar studies. Content validity was assessed by a panel of 5 experts, comprising of 2 dentists, 2 educators, and 1 administrator in order to identify necessary modifications and eliminate unclear points. Each item was improved and subjected to analysis by Index of Item Objective Congruence (IOC) yielding a score not less than 0.5. Then, the complete questionnaire was constructed according to the improvement.

Survey procedures

In the academic year of 2013, all the first-year students enrolled in the Faculty of Dentistry, Mahidol University, Bangkok, Thailand were invited to participate in this study by completing a questionnaire. The questionnaire

and the research methodology were approved by the Institutional Review Board of the Faculty of Dentistry/Faculty of Pharmacy, Mahidol University COE. No. MU-DT/PY-IRB 2013/013.2805. The questionnaires were distributed to the participated students and completed with no time limit. The students were asked to return the questionnaire immediately after completion to insure a good return rate.

The questionnaire was formulated into two parts. The first part included questions about students' sociodemographic information, such as, gender, GPAX in high school, type of high school from which the student graduated, domicile, admission system that they applied, and familial background. The second part questioned the factors that influenced their decision making to choose dentistry and to enroll at Faculty of Dentistry, Mahidol University. The questions were categorized by reasons into 3 major groups; 1) personal reason, 2) vocational reason, and 3) institution factor. The students were asked to rate the importance of each item for choosing dentistry as a career and Mahidol University as a school of choice based on a 5-point Likert scale of 1 (not at all important) to 5 (very important).

Statistical analysis

Statistical analysis was performed using the SPSS Statistics Version 18 (SPSS, Inc. USA). Descriptive statistics including percentages, means, and standard deviations were used to demonstrate the student sociodemographic profiles as well as rating scores and respond rate. Inferential statistics were performed in order to evaluate the influence of student sociodemographic profile on individual items for the decision making. Assumptions of normality within each group using Kolmogorov-Smirnov test ($p > 0.05$) could not be demonstrated in all cases. As a result, the non-parametric tests, the Mann-Whitney U test

was used for the analysis of two groups, i.e., gender, GPAX, type of high school, parents' education and the Kruskal-Wallis test was used for more than two groups, i.e., domicile, admission system, family income and parents' occupation. A $p < 0.05$ confidence level was considered significant.

Results

Sociodemographic profiles of first-year dental students enrolled at Mahidol University in the academic year of 2013 were demonstrated Table 1. Of the 110 first-year dental students, 99 students participated in this study, with 27 males and 72 females. They had a high level of academic performance, all had GPAX in high school above 3.00, and 84 students had a grade point average higher than 3.50. Most of the students (84 students) graduated from public schools and the domicile data showed that they were residents of the Bangkok and metropolitan areas (45 students) and provinces in the central region (42 students). Sixty-eight students were accepted in the dental program via direct admission, 19 from the quota system, and 12 from the central admission. There were 30 students with a monthly family income above 100,000 baht, 47 students between 50,000-100,000 baht, and 22 students with that lower than 50,000 baht. Both fathers' and mothers' occupations were self-employments, followed by government employees, and general employees. Among these students' fathers, 79 were high school graduates and 20 had a bachelor degree or above. Among these students' mothers, 85 were high school graduates and 14 had a bachelor degree or above.

The responses to questions regarding the reason for choosing dentistry and to study at Faculty of Dentistry, Mahidol University were shown in Table 2 as mean rating scores and percentage of respond rate at each level.

Results from personal reasons showed that 'guidance and support from parents' had higher influence on the students for choosing dentistry as a career (mean score of 3.94 ± 0.95 and the respond rate at score 4 and 5 of 72.7%) than 'good high school performance' (mean score of 3.80 ± 0.94 and respond rate at score 4 and 5 of 71.70%). In the group of the vocational reason the job security seems to be the predominant reason with mean score of 4.33 ± 0.87 and respond rate at score 4 and 5 of 87.9%, followed by 'desire to help other people'

(mean score of 4.13 ± 0.94 and respond rate at score 4 and 5 of 80.80%), and ability to work independently (mean score of 3.51 ± 1.28 and respond rate at score 4 and 5 of 53.60%).

The factors that influenced the decision making to enroll in the dental program at Mahidol University were investigated and ranked from the highest to the lowest mean score as faculty facilities (mean score = 4.08 ± 0.93), faculty reputation (mean score = 3.88 ± 1.03), alumni (mean score = 3.55 ± 1.20), and scholarship availability (mean score = 2.01 ± 1.11).

Table 1 Sociodemographic profile of the first-year Mahidol dental students, the academic year of 2013 (N = 99)

		Number (Percentage)
Gender	Males	27 (27.3%)
	Females	72 (72.7%)
GPAX in high school	3.00 - 3.50	15 (15.2%)
	3.51 - 4.00	84 (84.8%)
Type of high school	Public	84 (84.8%)
	Private	15 (15.2%)
Domicile	Bangkok and metropolitan areas	45 (45.5%)
	Central region	42 (42.4%)
	Others	12 (12.1%)
Admission system	Quota	19 (19.2%)
	Direct admission	68 (68.7%)
	Central admission	12 (12.1%)
Monthly family income	< 50,000 baht	22 (22.2%)
	50,000 - 100,000 baht	47 (47.5%)
	> 100,000 baht	30 (30.3%)
Fathers' education	Below Bachelor	79 (79.8%)
	Bachelor degree or above	20 (20.2%)
Fathers' occupation	Government employee	29 (29.3%)
	General employees/ Contractor	18 (18.2%)
	Self-employment	34 (34.3%)
	Others	18 (18.2%)
Mothers' education	Below Bachelor degree	85 (85.9%)
	Bachelor degree or above	14 (14.1%)
Mothers' occupation	Government employee	33 (33.3%)
	General employee/ Contractor	18 (18.2%)
	Self-employment	32 (32.3%)
	Others	16 (16.2%)

Sociodemographic factors of the students, i.e., gender, type of high school, family income, parents' education and occupation did not show any significant effects on the individual items within each influential factor group ($p > 0.05$). There were statistically significant differences between the students' GPAX and admission system in the mean scores of 'good high school performance' (Table 3) and the students' domicile in those of 'work independently' (Table 4).

Discussion

The motivation and reasons to choose dentistry as a profession may differ from one population to another. The factors that have been identified, for example, job security/ease of employment^{3, 10}, conception of dentistry as a profession/ prestige/ acquire social status/ reputation^{11, 13}, wish to be independent/ self-employment^{3, 7, 9}, financial benefit^{3, 9-12}, and helping people^{2, 3, 9, 10, 12-14} are concluded from several developed countries¹⁻¹¹, and few in developing countries¹²⁻¹⁶, and none from Asia.

Table 2 Influential factors for choosing dentistry at Mahidol University, as shown by mean and standard deviation of rating scores and respond rate (%) at each level. (N = 99)

Influential factors	Mean	S.D.	Likert scale				
			1	2	3	4	5
I. Personal reason							
1. Guidance and support from parents	3.94	0.95	2.00	5.10	20.20	42.40	30.30
2. Good high school performance	3.80	0.94	3.00	6.10	19.20	51.50	20.20
II. Vocational reason							
1. Job security	4.33	0.87	2.00	2.00	8.10	36.40	51.50
2. Work independently and being one's own boss	3.51	1.28	11.10	8.10	27.30	26.30	27.30
3. Desire to help other people	4.13	0.94	3.00	2.00	14.10	40.40	40.40
III. Institution factor							
1. Faculty reputation	3.88	1.03	4.00	6.10	17.20	43.40	29.30
2. Faculty facilities	4.08	0.93	3.00	3.00	12.10	46.50	35.40
3. Scholarship availability	2.01	1.11	43.40	25.30	22.20	5.10	4.00
4. Alumni	3.55	1.20	9.10	8.10	25.30	34.30	23.20

Likert scale; 1=not at all important to 5 = very important

Table 3 Sociodemographic factors that influence the motive factor 'good high school performance' to choose dentistry as a career.

Sociodemographic factor	n	Mean	S.D.	P-values
GPAX				
3.00 - 3.50	15	3.13	0.83	0.001
3.51 - 4.00	84	3.92	0.91	
Admission system				
Quota	19	4.16	0.90	0.026
Direct admission	68	3.82	0.98	
Central admission	12	4.25	0.75	

Table 4 Influence of students' domicile on the motive factor 'work independently' to choose dentistry as a career.

Sociodemographic factor	n	Mean	S.D.	P-values
Domicile				0.035
Bangkok and metropolitan	45	4.07	0.84	
Central region	42	3.79	1.05	
Others	12	4.00	0.95	

The present findings demonstrate the influential factors for choosing dentistry as a career of a group of students in Thailand. Our study comprised of only first-year students because our objectives focused on the factors that influenced the choosing dentistry and to study at Mahidol University. It has been previously shown that during the course of study perceptions of the career might change as the students gain more knowledge and their responses may be influenced by the experiences either positive or negative that acquired from more years of study in the program^{10, 17}. Results from other studies have shown that the first year students ranked factors related to financial and job security as significantly more important to choose dentistry as a career than the fifth year^{13, 18}.

Our results regarding the items in vocational reasons, are in general agreement with previous studies, demonstrating that the students choose dentistry as their future career because of job security^{3, 10}, altruism (help other people)^{2, 3, 9, 10, 12-14}, work independently^{3, 7, 9}. Results also indicated that the guidance and support from parents were among the important factors in making this decision. The studies in developing countries found that the advice of teachers and parents is the most relevant motivation^{15, 16}.

We are proud to state that our school is one of the best dental schools in Thailand. Thus it is not surprising that the students' reasons to attend Mahidol University are the school's reputation and facilities. We also investigated the socioeconomic statuses of the

students to characterize the type of students admitted into our program. This data is useful for policymakers to plan and implement the recruitment and retention program. Our descriptive results revealed that the majority of our students had a financial capacity above a certain standard. The homogeneity of our students could be explained by the previous reports that family socioeconomic status plays an important role in students' attainment and access to higher education¹⁹. Most of the students lived in Bangkok and nearby provinces (the central region). We had 3 times more female students than male, which is similar to other studies. They concluded that the dental professional is attractive to women as it allows them to balance their personal and professional lives, achieve financial gain, achieve professional prestige, as well as gain ability to work with others^{4, 8, 10, 20-22}.

We also investigated whether the decision making factors for choosing dentistry and our faculty as school of choice were influenced by the socioeconomic statuses of the students. Our findings could not indicate any significant impact of gender, type of high school, family income, parents' education or occupation. Several studies showed the difference between genders^{8, 13, 14, 20}. The 'desire to help people' was the predominant reason that motivated female more than males^{8, 13, 14}. Males were slightly more motivated by financial factors¹³, work independently²⁰ than females. Meanwhile, 'a challenging and interesting career' was scored higher in females²⁰.

However, we found that students with higher GPAX and applied through different admission systems were more motivated by 'good high school performance' to choose dentistry as a career. This could be explained by the fact that entrance procedures in Thailand for acceptance into the University for the Dentistry Programs are highly competitive and required students with high GPA. Additionally, the students from different domicile had slightly different motivation on 'work independently and being your own boss'. Those students may plan to pursue a dental career in a private practice.

Altogether, it could be suggested that a decision to enroll in the Faculty of Dentistry, Mahidol University is 'behavior', which have been influenced by several factors presented in this study. This can be described using a theory of planned behavior²³, regarding the behavior of individual in specific situation. This theory explains that a decision to perform a behavior is influenced by intention and behavioral control. The intention is influenced by "subjective norm, attitude toward the behavior, and perceived behavioral control". In this study, 'familial factors' are considered as a form of 'subjective norm' that covers support, recommendation, or convincement of parents. On the other hand, the institutional factors in this study can refer to 'attitude toward the behavior'. They include the quality of the institution, such as, conveniences and facilities. Lastly, the factors regarding the personal reasons seem to cover both 'attitude toward the behavior' and 'perceived behavioral control'. The belief in the quality of institution and the benefits of occupation can be considered as 'attitude toward the behavior', while the belief in an ability to compete and to afford tuition fees in the institution can be considered as 'perceived behavioral control'.

As with other decision making in life, the

choosing of dentistry as a career could be considered a multifactor process that most individuals consider and act on the overall reasons and alternatives¹¹. Our findings provide more knowledge about the perceptions of a group of students in Thailand has towards dentistry. Understanding students' reasons to join a dental school may help recruiters to develop appropriate strategies for ongoing student recruitment. It also helps to design appropriate and effective recruitment materials for perspective students, which provides them with accurate insights of the profession. In addition, it may facilitate a productive interaction between student and teacher^{8, 24}. Educators have a responsibility to ensure that the students are aware of the challenges and changes in student and professional life.

Within our limitations, the results presented indicated that the first-year dental students at Faculty of Dentistry Mahidol University is attracted to dentistry due to a positive perception of the work assurance, followed by the altruistic motivations of helping other people, and the ability to work independently. Results also indicated that the guidance and support from parents were among the important factors in the decision making.

Acknowledgements

The authors wish to thank Associate Professor Julalux Kasetsuwan, Associate Professor Dr. Somsak Mitrirattanakul, and Lecturer Kawin Sipiyarak for their suggestions. We also thank the first-year dental students of the academic year of 2013 for their participation in this study.

Funding: None

Competing interest: None

Ethical approval: The Institutional Review Board of the Faculty of Dentistry / Faculty of

Pharmacy, Mahidol University COE. No. MU-DT/PY-IRB 2013/013.2805.

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