

## Original Article

# Different study conditions between dental students in China and Japan

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**Abstract:** Background: The purpose of this study was to compare the study conditions of dental students towards dental education in China and Japan. Methods: 60 students from the Stomatology School of China Medical University and 51 students from the Dental Faculty of Kyushu University, Japan, participated in this study. Information was derived from a self-answered questionnaire consisting of 10 items. Results: More Japanese students (60%) compared to Chinese students (28%) were satisfied with their lives in dental school. For the main reason of discontent, 23.5% of the Japanese students attributed to busy study and lacking of spare time, while 38.3% of the Chinese students indicated small campus lacking of infrastructure. Conclusions: Both students of two countries think they were in big pressure. The main stressor of Japanese students was the examination, but that of Chinese students was anxiety of their future and obtains employment. The main source of tuition and maintenance was family in the both countries, but more Japanese students (25.5%) were dependent on scholarship compared with Chinese students (3.3%). Clinical Implications: The findings from this study enhance our understanding of study conditions among dental students and help to define strategies to improve student management in both Japan and China.

**Keywords:** Study condition, pressure, scholarship, Japan, China

## Introduction

In the previous studies, we compared the attitudes of dental students towards their career choices, future plans and dental education in China and Japan, and found obvious differences and similarities between the dental students in the both nations [1, 2]. However, our survey and comparison were still incompletely, in order to improve the quality of dental education and student management, we need to make further survey of study conditions of dental students.

Dental education is among the most expensive university programs in most of the countries. For most students, it is not only difficult to be admitted and graduated, but also suffers big pressure of study, competition and clinical practice. Another big and allimportant problem is to get enough money to pay for the tuition and costs. In 2006, the ADEA (American Dental Education Association) Commission on Change

and Innovation (CCI) developed a series of white papers to explore the case for change in dental education [3]. They rethought problems of dental education in the United States which was also important for most dental universities in the world. For one thing, the challenging financial environment of higher education, making dental schools very expensive and tuition-intensive for universities to operate and producing high debt levels for students that limit access to education and restrict career choices. For another, the nature of dental school education itself has been described as convoluted, expensive, and often deeply dissatisfying to its students. China and Japan are two of the most important eastern countries that have many differences with the European countries including dental education. Do the dental students of the two nations face the same problem and do the dental schools need to make some change to meet the need of the students will be survey in this study. This information may help to define

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strategies to improve students' management in both China and Japan.

### Material and methods

Fifth-year dental students of the School of Stomatology, China Medical University Shenyang, China, and sixth-year dental students of the Faculty of Dental Science, Kyushu University, Fukuoka, Japan, participated in this study. All participants were exposed to clinical practice in their university hospital at the time of the study. Participation was voluntary and anonymous.

Students were asked to remain after their class if they were willing to complete a survey about their study conditions. The participants were the students who had verbally consented to join this study. The questionnaire was administered to Japanese dental students in June 2013 and to Chinese dental students in November 2013. This study was conducted in full accordance with the World Medical Association Declaration of Helsinki. The Human Research Ethics Committee (or its equivalent) involved in this project approved the study protocol. Information was derived from a questionnaire consisting of 10 questions (**Table 1**). There were seven multiple choice questions (Item: 1, 5-10), one VAS (Visual Analogue Scale) question (Item: 3) and two descriptive questions (Item: 2, 4). The questionnaire was originally developed in English and then translated into Chinese and Japanese by bilingual faculty members. To confirm that the translated questionnaires had the same content, the Chinese and Japanese translations were checked by colleagues whose mother language were Chinese and had studied dentistry for more than 10 years in Japan. All versions were analyzed and compared by the authors, and a final version was obtained. The Chinese version was administered to Chinese dental students, and the Japanese version was administered to Japanese dental students.

### Statistical analysis

To evaluate the cross-cultural difference in the perspectives of dental students between the two countries, simple frequency tables for group comparison were developed; a chi-square test and Mann-Whitney U test were applied. Statistical significance was based on

probability values of less than 0.05. Data were analyzed by the GraphPad Prism 5 Project (Kyushu University, Fukuoka, Japan).

### Results

The valid response rates to the questionnaire by the Chinese and Japanese students were 93.8% (60/64) and 94.4% (51/54), respectively. In this survey, because of the voluntary and anonymous participation, information regarding demographic details and social background of the participants was not obtained. The number and percentages of responses in each country about study condition are presented in **Table 1**. Except the VAS question (item 3), significant differences in the responses of the participants from the two countries were detected for all the questionnaire items. About 60% of students in Japan were content with the dental school life, while only 28.3% of the Chinese students were content. For the main discontentment, we categorized the responses into nine items: (1) 'Busy' meant study on edge, too many required courses, few optional courses and hardly no spare time; (2) 'Teaching quality' meant poor teaching quality and low teaching level; (3) 'Campus' meant small campus lack of library, self-study room, sports buildings; (4) 'student society' meant lack of student societies and clubs; (5) 'Social bonds' meant simple social bonds, less aware of social norms; (6) 'Far' meant the school is far away home and the students cannot live independently; (7) 'Expensive' fee for tuition and maintenance is too high; (8) 'Mental stress' meant big stress of study, competitive and family's expectations; (9) 'Others'. Chinese students were main complain of the 'Campus' (38.3%) followed by 'Busy' (13.3%), 'Student society' (13.3%) and 'Social bonds' (11.7%), while the Japanese students' main discontentment was 'Busy' (23.5%) followed by 'Campus' (17.6%), 'Expensive' (15.7%) and 'Mental stress' (13.7%). Both the students of two countries think they were in big pressure and Chinese students (average: 6.3) appeared suffering heavier pressure than Japanese students (average: 5.6). For the stressor, we categorized the responses into seven items: (1) 'Examination' meant big learning stress or difficult examinations, (2) 'Future' meant anxious with the future/career, or obtain employment, (3) 'Clinical practice' meant (4) 'Relationship' meant interpersonal relationship problem, (5)

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**Table 1.** Comparison of study condition of dental students in China and Japan

Questionnaire Item No.	Chinese students, n=60	Japanese students, n=51	P
Are you satisfied with your life in dental school?			
Yes	17 (28.3%)	31 (60.8%)	0.0025**
No	28 (46.7%)	14 (27.5%)	
Uncertain	15 (25.0%)	6 (11.8%)	
If you are not content with your dental school life, then what is the reason?			
Busy	8 (13.3%)	12 (23.5%)	0.0269*
Teaching quality	3 (5.0%)	6 (11.8%)	
Campus	23 (38.3%)	9 (17.6%)	
Student society	8 (13.3%)	2 (3.9%)	
Social bonds	7 (11.7%)	5 (9.8%)	
Far	4 (6.7%)	2 (3.9%)	
Expensive	2 (3.3%)	8 (15.7%)	
Mental stress	4 (6.7%)	7 (13.7%)	
Others	1 (1.7%)	0	
Grade for your current pressure: (0-10 point, 0 for no pressure, 10 for enormous pressure) ※			
Average	6.3	5.6	0.1972 NS
What is your stressor?			
Examination	19 (31.7%)	32 (62.7%)	0.0158*
Future	30 (50.0%)	9 (17.6%)	
Clinical practice	4 (6.7%)	2 (3.9%)	
Relationship	3 (5.0%)	4 (7.8%)	
Expectation	3 (5.0%)	2 (3.9%)	
Problem	1 (1.7%)	1 (2.0%)	
Others	0	1 (2.0%)	
What is the effect of the pressure now?			
Makes me more endeavor	8 (13.3%)	24 (47.1%)	< 0.001***
A little pressure but not much effect	29 (48.3%)	17 (33.3%)	
A little laborious	21 (35.0%)	5 (9.8%)	
Bring me a certain mental stress	1 (1.7%)	2 (3.9%)	
Big pressure of psychological endurance	1 (1.7%)	2 (3.9%)	
Psychophysical disorder	0	1 (2.0%)	
Compared with the general cases, what do you think of your pay and reward?			
Equals	14 (23.3%)	37 (72.5%)	< 0.001***
Pay much but reward little	39 (65.0%)	3 (5.9%)	

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Pay little and reward much	2 (3.3%)	2 (3.9%)	
Uncertain	5 (8.3%)	9 (17.6%)	
Do you and your family have debt because of the tuition of learning dentistry?			
Yes	5 (8.3%)	30 (58.8%)	< 0.001***
No	52 (86.7%)	17 (33.3%)	
Uncertain	3 (5.0%)	4 (7.8%)	
If you have already had debt, do you think it will take pressure to your future life?			
Yes	2 (40.0%)	6 (20.0%)	0.3114 NS
No	2 (40.0%)	22 (73.3%)	
Uncertain	1 (20.0%)	2 (6.7%)	
What is main source of your tuition and maintenance?			
Parents and family	56 (93.3%)	33 (64.7%)	0.0025**
Loan	2 (3.3%)	2 (3.9%)	
Part-time job	0	2 (3.9%)	
Scholarship	2(3.3%)	13 (25.5%)	
Others	0	1 (2.0%)	
Do you think it is easy to gain the scholarship?			
Easy	14 (23.3%)	44 (86.3%)	< 0.001***
So so	22 (36.7%)	5 (9.8%)	
Difficult	20 (33.3%)	1 (2.0%)	
Uncertain	4 (6.7%)	1 (2.0%)	
What is the effect of the scholarship to your financial burden of your studies?			
Great help	7 (11.7%)	28 (54.9%)	< 0.001***
So so	23 (38.3%)	11 (21.6%)	
Not much help	18 (30.0%)	6 (11.8%)	
Hardly no help	12 (20.0%)	6 (11.8%)	

Chinese students: 60 responses and 4 non-responses. Japanese students: 51 responses and 3 non-responses. Chi-square test. ※Mann-Whitney U test \*P<0.05; \*\*P<0.01; \*\*\*P<0.001, indicates significant difference between the two groups. NS, Not significant.

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'Expectation' meant cannot achieve the expectation of the family, (6) 'Problem' meant mental stress or physical problem, (7) 'Others'. The most frequent source of pressure was 'Examination' in Japan (62.7%) and 'Future' in China (50.0%). More Japanese students (47.1%) thought the pressure had positive effects that made them more endeavor while the pressure had a little beyond the capability of the Chinese students and already bring some negative effects. Most Japanese (72.5%) students thought that their pay and reward were equal, but the majority of Chinese students (65.0%) thought they paid much but reward little. Only few students' families had debt because of the tuition of learning dentistry in China, but the majority of Japanese students (58.8%) got a debt. The main source of tuition and maintenance of the majority of the two nations were their families (China: 93.3%, Japan: 64.7%), but more Japanese students were dependent on scholarship (25.5%) for their tuition. It was a little difficult for the Chinese students (33.33%) to get scholarship and the scholarship might be not so helpful. While in Japan, it seemed much easier to get scholarship (86.3%), and the scholarship might have great help (54.9%).

### Discussion

In this survey, significant differences in the responses of the participants between China and Japan were detected for 9 out of the 10 questionnaire items. Both of the two dental schools in China and Japan were state schools that supported by the government. The students were more or less of the same level of their own Country respectively. Gallagher et al. [4] stated dental students considered that their view of dentistry had been tempered during their undergraduate training and education. Thus, we chose the participants of this study all in the last year of their college lives and already had a general impression of their dental education to keep a good effectiveness of this study.

#### *Part 1. life in dental school*

60.8% of the Japanese dental students were satisfied with their lives in dental school, while only 28% of the Chinese dental students indicated satisfaction. Chinese students were mainly complain of the small campus lacking of library, self-study room, sports buildings. While the Japanese students mainly complain of hard

study, too many required courses, few optional courses and hardly no spare time. The result of which was quite different with Yap's [5] and Karibe's [6] researches. In their studies, the dental students of Japan and North America countries were mainly complain of the curriculum and financial problem which was more or less agree with our study. But for Chinese dental school students, it was quite different. In China, dental school is not an independent college that separated from medical school and usually only a subordinate department belongs to medical school. Due to inadequate attention, the campus and infrastructure of dental school are small and poor. In recent years, more and more medical school and dental school were integrated into comprehensive universities to share educational and common resources [7, 8].

#### *Part 2. pressure*

Japan is known as one of the biggest working pressure countries in the world. With the rapid development of China's economy, work pressure of China is increasing significantly and even overtakes Japan. This phenomenon is also reflected in dental education. In our study, to grade the pressure more visualized and precise, we use VAS (visual analogue scale) system to show the pressure of students. Both the students of two countries think they were in big pressure. Although the average score of Chinese students (average: 6.3) was a little higher than Japanese students (average: 5.6), it was statistically inconclusive.

There were already some studies [9-11] about the stress of European dental students, the results of which were much different with our study. European dental students were more concern about things relative to clinical treatment. For example, Polychronopoulou et al. [10] reported that, assigned workload, performance pressure, and self-efficacy beliefs constituted the most stress-provoking factors. And students were less concerned about class work overload, clinical training difficulties, and course failing, but were significantly more insecure about their professional future.

The main stressor of Japanese students was examination. There are two important examinations for the Japanese dental students. One is CBT (Computer Based Test) and OSCE

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(Objective Structured Clinical Examination) which are held in the middle of the fifth year. If the student fails these tests, he will lose the chance to become a dental intern and must degrade to the lower grade to take CBT and OSCE again in the next year until pass them. Another is examination for dental licenses which will be held in the end of the sixth year. With the licences, postgraduate students can take the mandatory internship in a postgraduate clinical training course and then become a real dentist. But now, there are so many dentists in Japan that the sufficiency rate of dentist has been about 150% [12] and the Japan Ministry of Health has increased the difficult of examinations for dental licences to reduce the pass rate and alleviate the employment pressure. Thus, more and more Japanese students feel too much pressure to pass the examinations. Even though, most Japanese students (47.1%) thought the pressure had positive effects that made them more endeavor. Almost every student studies hard to pass the exam.

While Chinese students felt more anxious about their future and employment. For one reason, the competition is so intense that students without higher degrees cannot find good positions. Chinese students need to prepare for their future Master and/or Doctor Degree programs. For another, some of the Chinese students face the problem of whether gives up the dream to be a dentist because of the bad health-care environment of China recently [13-18] and the bad payment (average 400 dollars per month) [19]. The pressure was a little beyond the capability of the Chinese students and already bring some negative effects. This phenomenon needs to get attention by the health and education authorities of China. There is an urgent need for improving medical environment and reducing pressures upon their schoolwork and employment.

### *Part 3. pay and reward*

Most Japanese (72.5%) students thought that their pay and reward were equal. In Japan, as well as most European countries, dentist and doctor are in high social position and earn much which is equivalent to their long-term education, large amount of payment for the tuition and big pressure of many examinations. But the majority of Chinese students (65%) thought they paid much but reward little. As we

mentioned above, the payment is so few that cannot embody dentists' professional treatment value. On the other hand, doctors and dentists were not so respected by the masses, and even sometimes distrusted and misunderstand in China. After practice on clinic, students may find that dentists usually need to face patients' queries and be thought of as merely businessmen. Our private study found that some students even wanted to give up dental clinical work [1].

### *Part 4. tuition*

It is well known that dental education is one of the most expensive university programs all over the world. Surveys conducted by The American Dental Education Association on student financial assistance at U.S. dental schools showed that the price of higher education had risen as the costs of providing higher education had increased. 90.1% dental students received financial assistance (average \$43,191) in the form of loans, grants, scholarships, and/or work-study programs in 2003-04 [20]. Different with the European countries, in our study, only a few students' families had debt because of the tuition of learning dentistry in China and many Japanese students need to pay back the scholarship after their graduation. The main source of tuition and maintenance of nearly all the Chinese students (93.3%) were their families, but about one fourth of the Japanese students had scholarship (25.5%) for the main source of their tuition. For historical and cultural reasons, Confucian tradition places strong emphasis on the obligation to care for children that the parents pay for all the cost before the children take office. In addition, our result may be limited by our dental schools surveyed. Both of the two dental schools were state schools. The tuition of China Medical University is only \$1,000/year [21] which is not much different with other subject and there is no private dental school in China [7]. Although, in Japan, there are private dental schools and the tuition is also high, for state schools as Kyushu University, the costs are acceptable.

### *Part 5. scholarship*

It seemed not so easy for the Chinese students (33.3%) to get scholarship. Scholarships in China are all gratis and not need to pay back. It can be categorized into four types. The first and

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biggest one is National Scholarship which is about \$1,300 but only covers 4% of the all students [22]. The second is National Grants (for the students whose families are poor) which is from \$400/year to \$800/year and covers only 20% of the all students [22]. The third one is University Scholarship but the amount is much less. Recent years, more and more Chinese dental schools begin to receive company contributions to cover more students and help to solve the problem of scholarship lacking. Totally, all the four kind of scholarship covers only about 35% of all the dental students in China Medical University [22] which is more or less the same with other Chinese top dental schools. Although the scholarship are all free, the totally amount and the coverage are not big enough. Thus, provide more scholarship to more students such as more company contributions and grants from bank loans et al. can be considered.

While in Japan, it seemed much easier to get scholarship and it really helped much for their study. Nearly every student can get a scholarship, but actually most scholarships in Japan need to be paid back after graduation and even there are extra interest [23]. The tuition of dental school of Kyushu University is \$14,000/year, and common students need to apply for a scholarship of \$12,000/year at least to reduce the financial burden of their families. To encourage the students to work hard, the school will pay for the scholarship instead of a few top students whose study or research works were excellent. Interestingly, for the international students from developing/undeveloped countries, the school will cut the tuition and some company scholarships are set up specifically for these international students that do not need to be paid back.

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### Disclosure of conflict of interest

None.

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