สำนักงานวิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

CHAPTER V

DISSCUSION, CONCLUSION, AND RECOMMENDATIONS

1. Discussion

In this study, the findings were presented in 5 aspects which need to be further discussed. Those are:

- Social-demographic characteristics and dental status of respondents
- Oral hygiene behavior
- Fluoride supplement
- Eating habits
- Perception of dental health problems

1.1 Social-demographic characteristics and dental status of respondents

Under the main purpose of determining the prevalence and risk factors of dental caries in Thaibinh medical students, a population based cross-sectional study on a sample of 365 first year and second year medical students of Thaibinh Medical University was conducted. The prevalence of dental caries found by 70.4% almost equal to dental caries prevalence among 18-year-old males from Florianopolis, Santa Catarina, Brazil in 2003 (Bastos et al., 2005) and was lower than the prevalence among 18-34 year old people living in Red river delta, the area most subjects of my study came from, reported by the Nationwide Oral Health Survey 1999-2001 in Vietnam, which was 89.9%. This result is also consistent with the findings of Seibert in African-American youth and adults (Seibert et al., 2004). The lower prevalence of the study can be explained that over duration of 9 year from 1999 to 2008, the

development of social, economic resulted in improved quality of life made people might concern more about their dental health as well as the improvement of dental health care by non-government organization and government health care system and the popular of dental health communication by mass media. Furthermore, the study emphasized that medical students might be much more concern about health than other group at the same age, such as farmers, economics students, constructive students, etc because they had sense of their future work being a model of healthy behavior and healthy life for population.

However DMFT of my population is 2.28, nearly double that of 18-34 year old Red river delta residents established by the Nationwide Oral Health Survey (DMFT = 1.54) but it is a little bit lower than mean DMFT index of 18-year-old Brazilian males (Amaral et al., 2005; Bastos et al., 2005). It was about three times lower than mean DMFT of young Israeli adults which was 6.77 (Levin, 2004). If we look at detail of each components of DMFT, we see that mean of DT component which was 2.16 is much higher than this figure of Nationwide Oral Health Survey (mean dt of the survey = 1.15) and is higher than this among young Brazilian males (mean DT = 1.8) (Bastos et al., 2005). Meanwhile, means of FT components of these students population, which is 0.05, is much lower in comparison with National Survey (DT = 0.22) and Bastos' study (DT = 1.2) (Bastos et al., 2005) as well as Levin's findings among young Israeli adults (Levin, 2004). It means that in the population of medical students, a predominant group of these students had healthy dental status but in other smaller group, they were suffering very poor dental health with many untreated cavities (active caries) on their teeth. The noticeable low mean of 0.05 filled teeth strongly said that dental treatment in those who had dental caries was poor.

Association between general characteristic and DMFT pointed out that DMFT was significant higher in second year students and in older age group even this survey involved only two academic levels. It raises a question that whether there is a fast development of dental caries at the beginning of student life among these medical students or not. Say in other words, whether student's life in university develops dental caries or not. To answer this question, a longitudinal study which follows students from the beginning to the end of their course in university is necessary. The association between dental caries and subjects' age and subjects' sex indicated in this study is consistent with the finding of author Pitayarangsarit (Pitayarangsarit, 1996).
In relation to socioeconomic level, a tendency for worse dental health to be associated with higher socioeconomic status could be seen in this population. The higher prevalence of caries can be seen among students whose mothers' and fathers' job were well-paid or whose parent were high educated (table 21). Even so, most associations between socioeconomic indicators and students' dental health were not statistically significant.

1.2 Oral hygiene practices

Healthy oral hygiene practice in terms of brushing, frequency of brushing and time of brushing revealed the marked high proportion. 100 percent of sample brushed their teeth every day and more than 80 percent of them brushed twice a day or more. Additionally, the similarly high proportion can be seen in behavior of brushing after getting up and brushing before going to bed. However, the results showed that there was no association between daily frequency of brushing and DMFT (p-value = .951) as well as between frequency of changing toothbrush and DMFT (p-value = .736). On the other hand, statistical test revealed the significant association between brushing

time and DMFT in terms of brush after getting up with p-value = 0.027. Furthermore, among students who had no regular brushing schedule, DMFT was significant higher than DMFT among those who brushed their teeth regularly. It takes us to a thought that only brushing twice per day and changing toothbrush every 3 months or 6 months does not help much to prevent dental caries. Time of brushing appears more likely to protect teeth from cavity, especially brushing after getting up. Besides, methods of brushing, which was not measured in this study might have some impacts on dental caries protection. Therefore, recommendation for further study is that it should look at the all sides of brushing behavior: frequency, time and method so it can give the whole picture of influence of brushing behavior on dental caries.

1.3 Fluoride supplement

The findings pointed out that DMFT in "ever used any type of fluoride" group was higher than in "never used" group. The association went in the same way when we looked at individual supplements of fluoride. It is widely accepted that fluoride need time to affect on teeth. Subjects with a lifetime exposure to fluoridated water had lower dental caries experience than subjects with no exposure to fluoride had been documented by many researches (Hopcraft & Morgan, 2003). In this study, fluoride use was generally short-term, not long-term. Most students had ever used fluoride stopped using now. As stated in the literature review that until now there are only 2 provinces in Vietnam using fluoridate drinking water and none of the study's subjects came from these provinces. Otherwise, in Vietnam market, all adult toothpaste is fluoridated. Thus, it can be concluded with confidence that all subjects were exposed to fluoride in toothpaste. This might have confounded the observed relationships between fluoride supplements and dental caries experience in the present study.

Three type of fluoride listed in the study was not popular in the market. Fluoride mouth rinse was provided freely in some schools where performing school dental care program. Other fluoride supplements such as fluoride gel, fluoride table, fluoride vitamin were available in supermarkets or drugstores in big city but not available in small provinces where most subjects came from. Therefore, it was not easy for poor people even to know about such products. People who had good social economic status were more affordable and more comfortable to assess these kinds of fluoridated products. This point can be reasonable explained by the finding presented in table 25 and 26.

1.4 Eating habits

Grain was the food most frequently consumed in medical students. The most frequent grain consumed was rice. This is because rice was very popular in Vietnam and in Vietnamese eating manner; rice is the main source of providing calories in Vietnamese meal. In terms of nutrition, these medical students have good eating habit because in the top most consumed food list, grain is in the top, followed by protein foods such as pork, egg, fish, and tofu. Vegetable and fruit also were consumed more frequently than beverages and other highly concentrated sugar foods. Sugary food has been documented as a high risk factor for dental caries by a huge of researches (Lingstrom, 2006). Snacks, candy, cake, chocolate, gel, sweetened milk are popular food with high concentration of sugar, consumed by youths. Even so, these foods were not frequent foods consumed by studied subjects but in relationship with caries experience, many of these foods showed the significances. They were gel, chocolate sweetened milk with p-value < 0.05. For snack, the relationship with caries experience also is almost significant with p-value = .058. Our results were consistent

with the findings of the other Vietnamese authors on association between sugary foods and dental caries (Le, 2002).

In 4 over 6 unhealthy food items, DMFT went in the way that DMFT of "sometimes" user is equal or a little bit higher DMFT of "often" user but marked higher than this in "never or rarely" user. These foods are very high content of sugar and sticky foods. It could come and leave in teeth surface if the takers did not clean their teeth well after eating. This theoretical point was confirmed by the result shown in table 30 that students consumed more snacks performed poorer brushing behavior meanwhile students consumed less snacks performed better brushing behavior.

Sweetened milk stood second in the list of frequency of unhealthy food intake and had significant association with dental caries meanwhile unsweetened milk was less consumed and revealed no significant relationship with dental caries. This statement could be seen in many dental related studies in children (Bui, 2006; Le, 2002).

1.5 Perception of dental health problems

Dental pain is the most common symptom of oral problem. The prevalence of students who had had was 15.3%. Similar results were found in Toronto, Canada, with the prevalence reported in the previous four weeks was 18.0% among 14-20-year old male and female (Clarke et al., 1996). Another survey showed 21.2% of dental pain prevalence for young male adults from southern Brazil (Bastos et al., 2005). However, in this study pain did not showed significant association with dental caries experience. It is might be pain symptom was asked in terms of perception of subject and they may not notice mild cavity which causes as not much pain as moderate or severe cavity and can be ignored. Dental health related school absence also revealed significant association with dental caries.

Most dental problems considered were related to social life of individuals. Trouble with smiling, tooth color change, bad odor can make people feel unconfident about their appearance and can limit their social activities. Pains, chewing problem or tooth damage are not only physical dysfunction but also obstruct social daily activities. If people suffer it for long time, they can be lead to stress or even depression. Hence, the tendency for prevalence of dental caries to be higher when problem was reported mentioned to the thing that dental caries might not only influence on physical health but also influence on mental health. Therefore, assessing dental caries treatment needs to early prevention dental caries from getting worse in this population is recommended.

1.6 Scope and limitation

A sufficiently large sample size and the probability sampling design can assure good representativeness of the study sample, and reasonable generalizability of study findings. However, the study also revealed some limitations. Firstly, missing data can be seen in some variables. Secondly, the statistical analysis did not involve multivariable techniques such as logistic regression, linear regression. Thus, it was not able to fully test the relative importance of independent variables as well as fully identify confounding among these variables. Thirdly, a cross-sectional study design cannot give thoroughly explain the dental caries status (DMFT) because of cumulative characteristics of dental caries. Even so, epidemiologic data of dental caries still use DMFT and cross-sectional survey still is acceptable to define the dental caries status in population because of feasibility of finance and gathering sample.

The study limited in medical students in Thaibinh Medical University in first and second academic year, therefore the results cannot be applied to all students in the

university as well as to medical students in Vietnam. Nevertheless, the results of this study are expected to be useful as baseline data in planning dental caries education and prevention program for medical students.

2. Conclusion

The population based cross-sectional analytical study involved 365 participants. Data analysis included two components: descriptive data and analytical data. For data description, these techniques were used: frequency, percentage, means, and standard deviation. To assess association between dependent and independent variables, the following statistical test were used: Chi-square tests, Spearman's correlation coefficients, Manwhitney tests and Krusal-Walis tests.

The research found that the prevalence of dental caries (DMFT $\geq$ 1) was 70.4 and the mean DMFT was 2.28 ± 2.18. Mean filled teeth marked low (only 0.005 ± 0.46). There were limited proportion of ever visiting dentist (56.7%) and the very small proportion of visiting for dental checkup (13.5%). All the students brushed their teeth everyday in which almost students brushed teeth twice or more twice a day (83.5%). There were just above 50% of participants had ever used one type of fluoride supplement, not included fluoridated toothpaste, and 53.6% stopped using now. No significant association could be found between dental caries and fluoride supplements. The study revealed good eating habit among this population with most frequent food intake was healthy food. Significant associations were found between dental caries experience and unhealthy foods, especially sweetened milk, gel and chocolate. Perception on oral health problem in terms of pain, chewing, bad odor, tooth damage, tooth color, smiling, communication, and school absence were 57.1%,

35.5%, 17.2%, 9.9%, 9.3%, 6.5% and 4.5% respectively. Significant association was found between tooth damage and dental caries experience.

3. Recommendation

3.1 For policy

Base on findings of this study, the following policies are recommended:

1. Organize educational programs for early prevention dental caries. The concept of education should focus on brushing practice, especially frequency and time of brushing. The program also should focus on knowledge of using fluoride supplement such as the supplement should be long-term, as well as focus on healthy eating habit, such as cut down unhealthy food in diet. Besides, the program also should communicate to the population the necessary of regular dental check-up.
2. Open primary care dental office in campus so that students can easily assess dental service and get consultancies as well as basis treatments. Encouraging students take their dental check-up and dental treatment in public and private odonto-clinics.

3.2 For further study

A comprehensive study on students with many backgrounds, not only medical students should be conducted to see the whole picture of dental status and dental caries risk in this important population. Further research is also needed to characterize time relationships between dental problems as perceived by subjects and dental caries as measured externally.