CHAPTER I

INTRODUCTION

1. Background and significance of the problem

The two most common oral diseases which hinder the achievement and maintenance of oral health are dental caries and periodontal disease and these affect all age groups, not only children (Thean et al., 2007). WHO pointed that the global problems of oral diseases still persists despite great improvements in the oral health of populations in several countries. Dental caries is one of major public health problems worldwide. WHO also claimed that poor oral health may have a profound effect on general health as well as quality of life, and several oral diseases are related to chronic diseases. The experience of pain, problems with eating, chewing, smiling and communication due to missing, discolored or damaged teeth have a major impact on people's daily lives and well-being. Furthermore, oral diseases restrict activities at school, at work and at home causing millions of school and work-hours to be lost each year throughout the world (Petersen et al., 2005)

At present, the distribution and severity of dental caries vary in different parts of the world and within the same country or region. It is affecting 60-90% of schoolchildren and the vast majority of adults. It is also a most prevalent oral disease in several Asian and Latin American countries. However it is expected that the incidence of dental caries will increase in the near future in many developing countries (Petersen et al., 2005)

Nowadays, as a consequence of high prevalence of dental caries, the treatment need is increase. However, treatment cost for dental disease is normally high. In the United States annual treatment costs are estimated to be at least $4.5 billion (Aligne et al., 2003). Therefore, treatment for all community is not feasible due to limited resources such as time, person and money. On the other hand, prevention is more affordable. Through many years, prevention of dental caries program has become one important policy of Ministry of Health in many developed and developing countries. However, most of such programs are focusing on children and lack of program which is particularly for adults, especially for young adults. The same situation comes when we mention to research field. I searched from PubMed with "dental caries" and "children" in title as key word then I found that there were 12644 articles related to that topic, with key word "dental caries" and "adults" in title, total number of articles was only 6398 but with narrower key word "dental caries" and "young adults" in title, total number of articles was only 130 (search on 12/30/07). The healthy permanent dentition is also very important because it must last for a lifetime. Therefore, "Oral health is essential to general health and well-being at every stage of life" is significantly pointed out in a "National Call to Action to Promote Oral Health" of the U.S Department of Health and Human Service which was published in May, 2003.

Vietnam is one of the developing countries facing a high prevalence of dental caries. A nationwide survey of oral health conducted by Ministry of Health cooperated with Adelaide University of Australia in 2002 pointed that caries disease affected more than 50% of Vietnamese population, in which people aged 18-34 held 75.2% of tooth decay prevalence (Tran et al., 2002).

Dental caries is one of the most prevalence diseases in the Red river Delta of Vietnam and exists as a major public health problem. The "school dental health promotion and preventive program" is the largest preventive program which has been running for 10 years but only is limited in 6 provinces and focus only on primary schoolchildren. Young adults who are at the age of 18-25 have not taken much dental health care or dental health promotion. Besides, many of them are suffering from such disease. If left untreated, tooth decay can result in substantial morbidity due to pain, dysfunction, poor appearance, and possibly problems with speech development. Toothaches are the most common pain of the mouth or face reported by adults. This pain can interfere with vital functions such as eating, swallowing, and talking. Some researches related to dental caries in Vietnam were carried out but I could find none of them addressed to such disease in young adults.

University students play a significant role in public life. As the education of the medical student progresses, he or she is expected to be a role model for his or her patients, becoming a teacher of hygiene practice. Many of them might be dentists in the future and will be expected to perform a healthy oral health lifestyle. Patterns of oral hygiene in medical students are therefore particularly significant. However, little attention has been paid to the context in which medical students undergo motivational and behavioral changes with respect to their oral self-care regimens (Komabayashi, 2005).

Thaibinh is one of Northern Provinces of Vietnam, on where Thaibinh Medical University is located. Until now, there is no available data of dental health status in young adult in this province. Thaibinh Medical University's students also have never been recruited for any study related to oral health.

For these reasons we conducted the study: The relationship between dental caries status and associated factors in medical students in ThaiBinh Medical University in academic year 2007-2008.

2. Research question of the study

Is there any relationship between dental caries and social-economic status oral hygiene practices, eating habit, tobacco smoke exposure and fluoride supplement among medical students?

3. Hypotheses of the study

- Better oral hygiene practices associate with lower dental caries.
- Healthy eating habits associate with lower dental caries.
- More tobacco smoke exposure associate with higher dental caries.
- There is an association between dental caries and fluoride supplement.
- Low social-economic status associates with high dental caries.

4. Purpose of the Study

- General objective:

  To identify the relationship between social-economic statuses, oral hygiene practices, eating habits and fluoride supplement with dental caries among medical students.

- Specific objectives of the Study.

  1. To describe dental caries status.
  2. To measure social-economic status, oral hygiene practice, eating habits, tobacco smoke exposure and fluoride supplement.

3. To characterize the relationship between oral hygiene practices and dental caries
4. To characterize the relationship between eating habit and dental caries
5. To characterize the relationship between tobacco smoke exposure and dental caries
6. To characterize the association between fluoride supplement and dental experience
7. To characterize the association between social-economic status and dental experience.

5. Benefits of the study

The present study provided information about risk factors of dental caries in Thaibinh Medical University's students for further program planning implementation and evaluation in public dental health service.

6. Brief description of the study area

Thaibinh is a purely agricultural province located in the Red river Delta in the north of Vietnam. The province is about 100km far from the capital. Thaibinh is in the center of region and has a convenient transportation to other provinces. The disease pattern in this province is also typical for the disease pattern in the region. Because of these reasons, Thaibinh was chosen to place Thaibinh medical university in June 1979. Thaibinh Medical University is training both doctors of medicine and pharmacists with many codes of graduates of medicine and pharmacology, post graduates of medicine and pharmacists at high school level. Training doctor of general medicine is the most important task of the university. The university recruits

about 200 new students each year for this course. The present number of students at the university is over 3000, in which 1852 is the number of medical student, including 228 first-year students and 279 second-year students. These medical students all came from 8 provinces in Red river Delta. The academic duration for this type of training is 6 years. On two first years, students are trained gathering in class. From the third year, students both learn in class and practice at hospital. Odontology is taken by students at the fifth year.

7. Variables in the study

Independent variables

- General characteristics

  Gender

  Social-economic status

  Accordance with the minimum wage established by Vietnam government in 2006, the minimum wage was 500 thousand Vietnamdong/cap/month, (approximate 1000 Thai Bath).

- Oral hygiene practice

  Frequency of tooth-brushing

  Frequency of dental visit

- Eating habit

  Type of food

  Frequency of food intake

- Tobacco smoke exposure

  Frequency of smoking

Frequency of passive smoking

- Fluoride supplement

Type of fluoride supplement

Time used

Dependent variables

Dental caries refers to a pathological condition of tooth with localized destruction enamel and dentine by micro organism. The indicator will be measured in this study using DMFT indicator (decayed, missing and filled teeth), which describes prevalence of dental caries in permanent teeth in an individual. DMFT reflects numerically express of caries prevalence and are obtained by calculating the number of:

D: decayed of permanent tooth

M: missing permanent tooth

F: filled permanent tooth

The missing component (M) and filled component (F) indicates those teeth missing or filled as a result of caries.

DMFT score was calculated as follow:

$$\textbf{Mean DMFT} = \frac{\sum \mathbf{D} + \sum \mathbf{M} + \sum \mathbf{F}}{\textbf{Number of students examined}}$$

Teeth (T) are thus used to get an estimation illustrating how much the dentition until the day of examination has become affected by dental caries. It is either calculated for 28 (permanent) teeth, excluding 18, 28, 38 and 48 (the "wisdom" teeth) or for 32 teeth.

8. Conceptual Framework

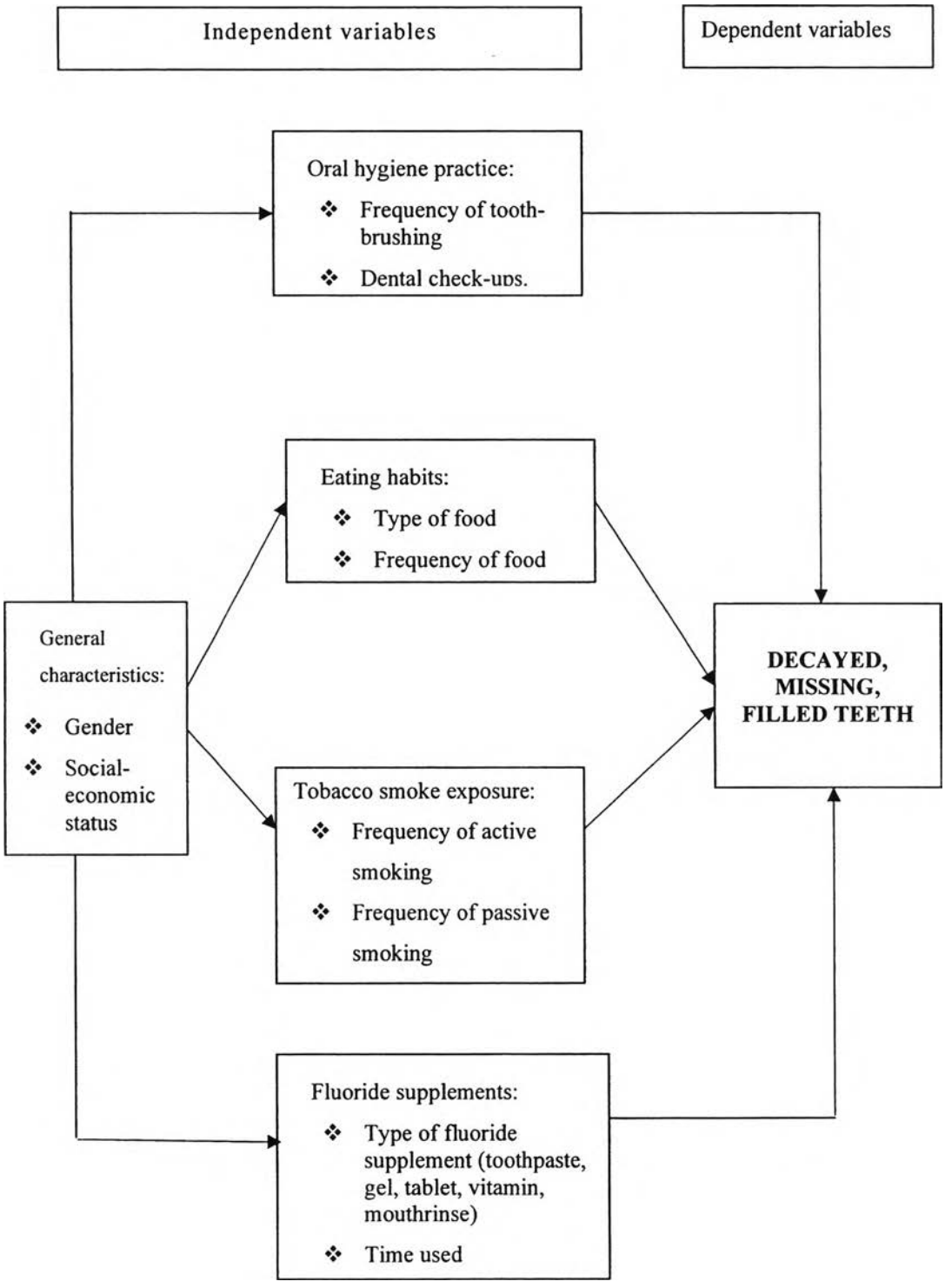

Figure 1: Conceptual Framework