

# Chapter 1

## Introduction

A marked decline in dental caries of children has been observed in many industrialized countries (Bratthal *et al*, 1996). This decline in caries has been attributed to an increase in preventive measures such as the widespread use of fluoridated toothpastes, the use of fissure sealant and changing public awareness (Baltutis and Morgan, 1998). The recent national oral health survey of Thailand in 2007 reported that more than 80% of children at age 5- 6 were affected by caries in the three southernmost provinces of Thailand. It was indicated that the prevalence of dental caries was substantially higher in this area compared to the other parts of Thailand (Thianmontri, 2008). Parents, school teachers and dental nurses are being the most important key people in health communication to improve oral health in children (Peterson *et al*, 2001). This study's focus is on current working practices of dental nurses in the three southernmost provinces of Thailand. In this chapter we describe the background and rationale, objective and literature review of this study.

### 1.1 Background and rationale

Dental nurses are members of oral healthcare teams. They play an important role in the oral health care services of children (Dental Nurse Association of Thailand, 2010). Their main job is to provide dental care services to children aged less than 14 years. The working practices of dental nurses under the Ministry of Public Health are preventive dentistry, emergency dental treatment, dental treatments and gum treatment by scaling (Ministry of Public Health, 1996).

Thailand's national data on dental caries in children have shown a marked increase in prevalence and severity. The proportions of dental caries in 2007 among children aged 3, 5 and 12 years were 61.4%, 64.9% and 56.8%, respectively (Dental Health Division, 2008). The situation was worse in the three southernmost provinces, where the prevalence rates of dental caries in children aged 3, 5 and 12 years were 64.0%, 85.5% and 58.0% respectively (Thianmontri, 2008). Caries obviously still is a major problem in Thai children, especially in the three southernmost provinces of Thailand. Caries prevention is better than treatment. Prevention of dental caries can be achieved by performing oral health education and using fluoride. Many studies have reported that teeth extraction, gingival scaling and tooth fillings have been the three most common activities performed by dental nurses. The least common were performing sealant and providing oral health prevention, respectively (Parkpien, 1988, Ungchusak *et al*, 2001, Arunprapan *et al*, 2002).

Moreover, working practices of dental nurses in the three southernmost provinces of Thailand have been rarely studied. This study aims to examine the level of working practices and factors affecting working practices of the dental nurses in the three southern provinces of Thailand.

## **1.2 Objectives**

1. To investigate levels of working practices of dental nurses in the three southernmost provinces of Thailand.
2. To study factors that affect working practices of dental nurses in the three southernmost provinces of Thailand.

3. To investigate working problems of dental nurses in the three southernmost provinces of Thailand.

### **1.3 Literature Review**

The literature review is divided into three parts. They are dental nurse education in Thailand, the role of dental nurses in Thailand and related research.

#### **Dental nurse education in Thailand**

The school of dental nursing has been established since 1968 to provide dental care for children, because of the prevalence of severe dental disease among Thai children and inadequate numbers of dentist (Wongkongkateb and Yongwanichakorn, 2003).

There is similarity with the dental nurse provision in New Zealand (Dental Nurse Association of Thailand, 2010).

A dental nurses' training programme in Thailand is a two years diploma offered by Sirindhorn College of Public Health, Institute of Prabromaradchachanok, Ministry of Public Health. The campuses of Sirindhorn College of Public Health are in Chonburi, Khonkean, Phitsanulok, Ubonradchathani, Yala, Trang and Suphanburi. In the past the Thai government provided a position for each dental nurse who graduated working as dental government officer level 2. Nowadays there is no official government officer position attached to and so they have limited employee benefits since 2002 (Dental Nurse Association of Thailand, 2010). Career advancement has been limited because dental nurse cannot develop additional skill during their career. Therefore, they have continued to expand themselves in order to develop in their career. For that reason many dental nurses had to change their job to become public health personnel, administration officer or others (Dental Nurse Association of

Thailand, 2011). From 2012 their course moved from a 2 years diploma to a 4 years degree program (Prabromaradchachanok Institute, 2012).

### **Role of dental nurses in Thailand**

Dental nurse curriculum has been revised every five years. In the past the dental nurse curriculum had more focus on clinical activities than preventive and project activities. A current dental nurse curriculum was introduced in 2007. It has a focus on oral health prevention because dental caries can be prevented by a combination of community, professional and individual measures including applying topical fluoride and dental sealant (Prabromaradchachanok Institute, 2007).

The working practices of a dental nurse are simple extraction, plaque control, gingival scaling, simple extraction by using local anesthesia, fluoride application, pit and fissure sealant, implement dental public health plan and projects in consistent with the dental community and local issues, caring and basic maintenance, prevent and control the spread of infection in the dental clinic.

### **Related Research**

The dental nurses' programme in Malaysia is a three years diploma offered by Dental school of Penang. They deliver oral healthcare to school children below the age of 17 years old. They have career advancement by post basic training based in specialist clinics (Oral Health Division, 2005). New Zealand has a long history of dental care provided by school dental nurse, now known as dental therapists. They are trained at the dental school to treat children between the ages of 6 and 14 years. Since 2001 their course has moved from two years diploma to three years degree program for dual trained oral health professional by the universities (Coates *et al*, 2009).

A dental therapist' programme in the United Kingdom is a three years degree. They can develop additional skill during their career (Rowbotham *et al*, 2009). In The United states, dental therapists are practiced in public school for improved children access to oral health care and oral health outcomes. (Mathu-Muju *et al*, 2013).

An evaluation on the working practices of dental nurses was conducted in the United kingdom found that 95% of dental nurses were providing simple fillings, 4% of them were providing suture in the oral and there were some dental nurses who still worked beyond the scope of law (Gibbons *et al*, 2000). A survey of dental therapist' working practices in the United Kingdom showed that over 90% of therapists stated that they perform three common procedures (scaling, fissure sealant and oral health promotion). However, a lower proportion took radiographs (Godson *et al*, 2009).

A study in Western Australia showed that 28% of dental therapists do not work in their career. A number of reasons for leaving their profession were family reason, career change, poor salaries, boredom, relocation, illness and stress (Kruger *et al*, 2007), agree with result of study in Texas (Johns *et al*, 2001).

An investigation of working practice was conducted with dental nurses, who work at the health center and public hospitals throughout 72 provinces of Thailand, showed that providing simple dental treatment is the main role of the dental nurse in practice. On the other hand, the dental nurses' practice of solving community's dental problems was the minimal performance (Parkpien, 1988). A study of a dental nurse' role in health centers of Thailand found that 86.5% were performing simple filling, gum scaling, simple extraction, while 5.8% were providing fluoride application, sealants (Wiboonponprasert, 1999). Additionally, another investigation of working practices in eight public hospitals showed that less than 50% of dental nurses were

providing oral health promotion among children of pre-school age and the community (Wongkongkateb and Yongwanichakorn, 2003). A study of the work load of dental nurses in 75 provinces of Thailand found that the proportion of dental services: promotion: prevention service was 3: 1: 1 (Onksririmongkol *et al*, 2008).

A study of 314 dental nurses' working practices in community hospital in Thailand found that age, gender, marital status, working status and educational level are not related to dental nurses' performance (Kampira, 1996). Many studies reported about working problems of dental nurses in Thailand such as insufficient dental instrument, lack of encouragement and welfare, the roles is not clear and there were some dental nurses who still worked beyond the scope of law (Kampira, 1996, Pitakuldilog, 2007, Wijaranaphiti *et al*, 2009).

In summary, the literature review showed that the studies of working practice of dental nurses in Thailand have not yet been sufficiently examined what happens in the three southern provinces of Thailand.

#### **1.4 Outline of the study**

This thesis contains five chapters. The introductory chapter discusses the background and rationale, objectives and also includes a review of relevant literature.

Chapter 2 provides a description of the methodology, including an overview of the statistical methods which used in this thesis.

Chapter 3 shows results of preliminary data analysis, factor analysis and box plot graphically describing association between working practices of dental nurses and each determinant.

Chapter 4 presents the results of multiple linear regression model.

The last chapter states the conclusion and discussion. Recommendation and suggestion for further research are also provides in this chapter.

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