

CHAPTER I

Introduction

Dental caries is one of the most highly prevalent oral diseases (WHO, 1992). During the past few decades, many studies attempted to develop preventive strategies. Study results suggested that fluoride is most effective in caries prevention (WHO, 1994). Many children in developed countries are now caries-free (Bowen, 1995). However, dental caries protection by fluoride is not absolute. Additional effective approaches need to be developed (Bowen, 1995). Developing countries face the high prevalence of dental caries (Douglass, Wei, Zhang, and Tinanoff, 1995).

Thailand is one of the more rapidly developing countries. In 1994, the percentage of Thai children aged three and six affected by caries were 61.7 and 85.1 with the average Decayed-Missing-Filled Teeth (DMFT) of 3.4 and 5.7 respectively (Dental Health Division [DHD], Health Department, Ministry of Public Health [MOPH], 1994). During 1984-1994, the percentage of six-year-old children who were affected by caries had increased from 71.6 to 85.1 (DHD, 1994). The prevalence of caries among children in the northeast region was lower than the average of the whole country but there was increasing trend - different from other regions. Dental caries is nearly stable in the South and is decreasing in the Central and the North (DHD, 1994).

Khon Kaen Province is a center of industrial development in the Northeast. The GDP per capita there in 1994 was 29,987 Baht. It was the top-ranking province in the Northeast (National Statistical Office [NSO], 1996). The caries prevalence of Khon Kaen preschool children was also high and had increasing trend (Khon Kaen Provincial Health Office [KK.PHO], 1996).

Thailand is concerned about child dental caries as a public health problem. Thus, it was proclaimed that by the year 2000, thirty percent of five- and six-year-old children will be caries-free (DHD, 1994). Since the percentage of Khon Kaen children who were free from dental caries was 11.3 (KK.PHO, 1996), the gap between the present situation and the ideal is very wide and difficult to close.

My organization, the Dental Section of the Khon Kaen Provincial Health Office, is involved in the development of policies concerning oral health. The roles are problem identification, priority setting, policy selecting, technical implementation, and evaluation. The aim is to promote oral health of the residents in Khon Kaen Province. My concern in research is emphasis on technical applications more than on innovative knowledge. The objectives of this study were to evaluate the previous interventions, define an effective technical approach and estimate caries reduction by simulation, and propose effective dental caries prevention in preschool children.

This portfolio consists of six chapters. Chapter two is an essay about dental caries prevention in preschool children. The issue was that Government should propose the effective prevention to encourage the residents to take care of themselves.

This chapter also reviews the risk factors of dental caries, the previous program and discusses the effectiveness and feasibility of the programs.

Chapter three is a report on the data exercise of the quantitative and qualitative data. This exercise evaluated the previous intervention and analyzed associated factors leading to dental caries in preschool children in Khon Kaen. The significant factor, which can be implemented as a policy, was selected for testing policy simulation. The qualitative data were reported in order to provide a crude picture of health volunteer activities and childhood oral care within the family. The results from this part were used to develop the proposal in chapter four.

Chapter four is the proposal for dental health database improvement and oral health promotion activities with the participation of health volunteers. It also includes the rationale, objectives, and methodology of action, budget, and evaluation of this program.

Finally, figure of transparency and bibliography are presented in chapters five and six.

References

- Bowden, G.H., Milnes, A.R., & Boyar, R. (1983). *Cariology 1983*. Zurich: Karger.
- Division, Dental. Department, Health. Ministry, Public Health. (1994). *Thailand 4th National Oral Health Survey 1994*. Bangkok: Veteran Organization.
- Douglass, J.M., Wei, Y., Zhang, B.X., & Tinanoff, N. (1995). Caries prevalence and patterns in 3-6 year-old Beijing children. *Community Dentistry and Oral Epidemiology*, 340-343.
- Khon kaen Provincial Health Office. (1996). *Oral health status of population in Khon Kaen Province 1996*. Khon kaen: Penprinting.
- Kidd, E.A.M., & Joyston-Bechal, S. (1987). *Essentials of dental caries: The disease and its management*. Bristol: Wright.
- National Statistical Office. (1996). *Key statistics of Thailand 1996*. Bangkok.
- W.H.O. (1992). *Recent advances in oral health*. Geneva: World Health Organization. 826, 1 p. WHO. Technical Report Series, No. 826.
- W.H.O. (1994). *Fluorides and oral health*. Geneva: World Health Organization. 846, 1 p. WHO. Technical Report Series, No. 846.