

# CHAPTER 1

## INTRODUCTION

Osteoporosis is a condition characterized by a reduced amount of bone, leading to diminished physical strength of the skeleton and an increased susceptibility to fractures. Osteoporosis had enormous consequences on the world's health, both present and future. It caused a high level of morbidity and mortality, and incurs great medical expenses worldwide. There is a lack of data about osteoporosis incidence in Thailand. Most literature present data of the United States, where osteoporosis afflict over 25 million people, including one-third to one-half of all postmenopausal women (Peck, 1993). Of 75 year old women, 80-90% were susceptible to fracture because of bone loss. The annual incidence of osteoporosis related fractures was 1.3 million, including over 500,000 vertebral and 250,000 hip fractures, and 10-15% of hip fracture victims will die within 1 year of the event (Suwanvaiaikorn, 1996). Among these fractures, hip fracture was the most serious problem which was usually associated with three week hospitalization and an excess mortality rate of 12% to 20%. Approximately 50% could no longer be able to pursue the activities of daily living independently (Ratchatanawin, 1999). The annual cost of osteoporosis was an estimated \$ 10 billion. In Thailand, the cost of surgery in hip fracture was more than 60,000 baht while the income of GDP is only 30,000 baht (Boonyarattavej, 1996). In addition, the cost associated with fractures were very high for the patient to bear. Personal cost includes pain, bed-ridden for months, depression and if serious enough death. Family cost includes physical, mental and emotional stress on family

to take care of the patient. Economic costs are loss of income, medical and hospitalization fees and others.

Drinking too much caffeine and smoking lead to bone loss without any warning symptoms. People might not know that they had osteoporosis until their bones become so weak that a sudden strain, bump, or fall causes a fracture or a vertebra to collapse (Visitsunthorn, 1996). By about 20, the average women would have acquired 98% of their skeletal mass. Building strong bones during childhood and adolescence such as calcium intake and weight bearing exercises can be the best defense against before development of osteoporosis (Farley, 1998). Effective preventive management of this disease is important as that it can reduce the mortality and morbidity rates in future generations.

Several studies have shown that young women do not care about their health and they are not interested in getting enough calcium and exercise which lead to osteoporosis developing in the future (Chapman, 1996). Recent evidence suggested that a low calcium intake might be a serious problem because it could result in decreased peak bone mass in early adulthood, increasing the risk for development of osteoporosis (Farley, 1998). For females especially, eating enough calcium was particularly important during childhood, adolescence, and young adulthood (Komin, 1997).

The Health Belief Model had been applied successfully in the prediction of numerous preventive health behaviors. The model included such factors as perceived susceptibility to becoming ill, perceived severity of

the illness, perceived costs and benefits from taking actions to avoid the illness and the actual taking of those actions.

In this study, the Health Belief Model and education in osteoporosis were used to promote reduction in smoking and caffeine drinking and to increase calcium intake and weight bearing exercise in young woman.