

## CHAPTER 1

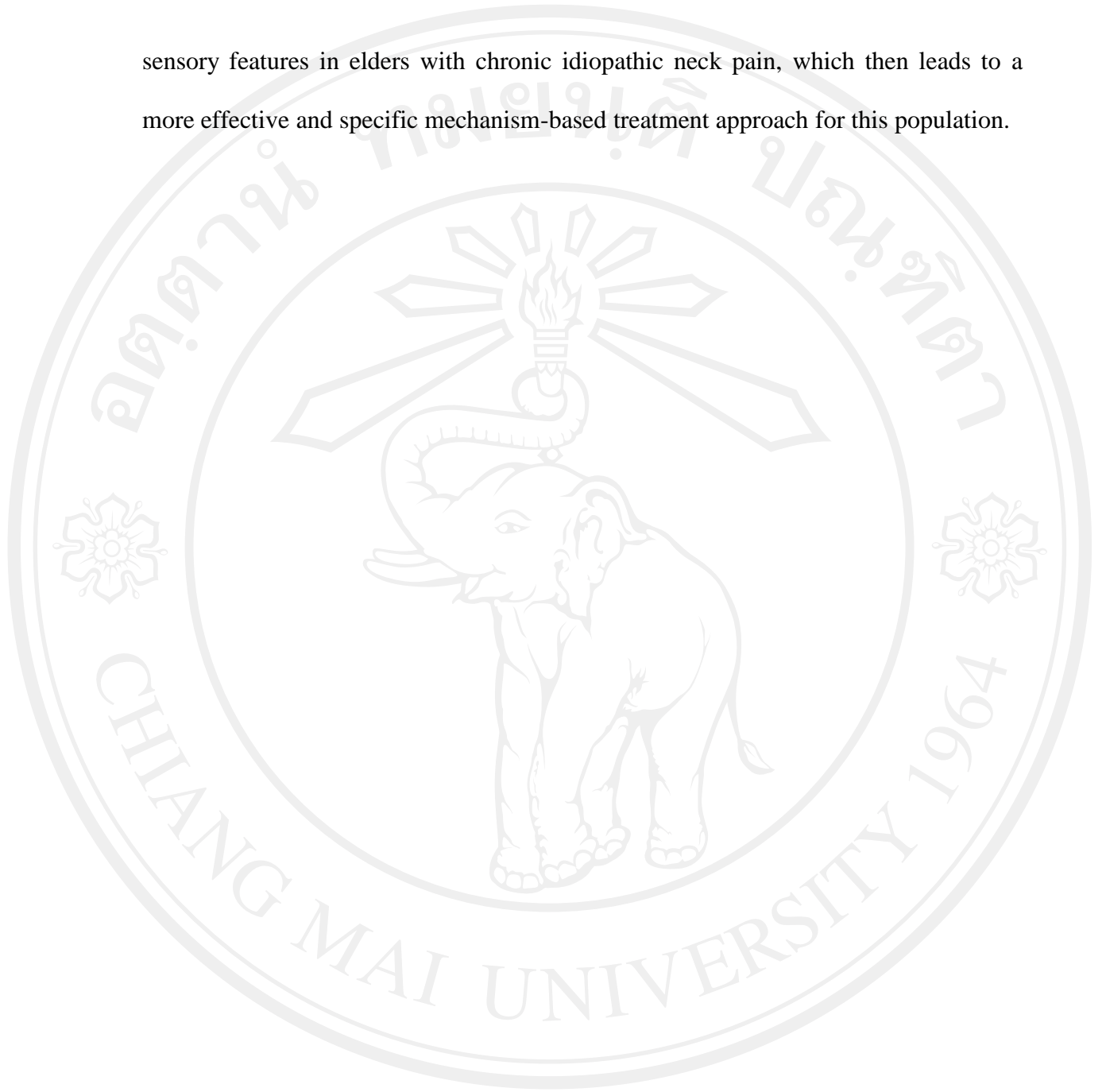
### INTRODUCTION

Neck pain is one of the common musculoskeletal complaints in the elderly population. The estimated point and lifetime prevalence of neck pain in the elderly population is 38.7% and 17%, respectively (1-3). Women report more neck pain than men (2, 4-6). It is evident that neck pain has substantial effects on physical and psychosocial functions (4, 7-9). A study demonstrated that 7% of elders who suffered from neck pain had modified or diminished their physical activity (6). Additionally, pain intensity and duration were found to be important factors associated with diminishing physical activity in those elders (6). A better understanding of neck pain condition and mechanisms in the older population will lead to better treatment strategies and then enhanced physical and psychosocial functions for this population with neck pain.

There is evidence of alterations in pain perception in patients with neck pain, which likely reflects underlying changes in neurobiological processing of pain mechanisms (10, 11). Numerous studies have demonstrated significant reduction in pressure and thermal (heat and cold) pain thresholds over a local area (the cervical spine) (10-14) and a remote site (the tibialis anterior) (12, 13) in patients with chronic neck pain compared to healthy controls, suggesting alterations of peripheral and central nervous functions. Recent studies have also demonstrated that pressure and cold pain thresholds in patients with chronic mechanical neck pain are correlated with level of pain intensity and disability and depression (11, 14). Notably, most previous

studies have investigated in younger/middle-aged populations with neck pain. There is evidence of age-related changes in pain response and pain processing (15, 16). In general, older persons demonstrated an increase in heat pain thresholds (15, 16), a reduction of pressure pain thresholds (17, 18) and supra-threshold responses (16) compared to younger adults. The altered pain sensitivity in older people can also be attributed by many factors including a loss of nociceptors and impairment in peripheral and central nervous system function. In addition, it can be associated with psychological distress (e.g. depression and anxiety) and pain experiences (19-22). Given the changes in pain perception with age and their association with psychological factors, it was questioned whether altered pain threshold to mechanical and thermal stimuli in elders with neck pain was similar or different to findings, which have demonstrated in younger/middle-aged populations. At present, there have been only a few studies investigating pain perception in elders with pain compared to those without pain and findings have been still controversial. For example, Lee et al (23) reported localized and generalized pain sensitivity in elders with knee osteoarthritis. On the contrary, Uthaihpun et al (24) demonstrated that widespread pain sensitivity was not a feature of elders with frequent intermittent headache. The results of Uthaihpun's study also did not support previous findings which have been conducted in middle-younger populations (25-27). As yet, there is no research investigating sensory features associated with neck pain specifically in the elderly population. Therefore, the purpose of this study was to determine the presence of sensory and psychological features in elders with chronic idiopathic neck pain compared to healthy elders. This study stands to enhance a better understanding of

sensory features in elders with chronic idiopathic neck pain, which then leads to a more effective and specific mechanism-based treatment approach for this population.



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## **Aims and hypotheses of the study**

### **1.1 Aims of the study**

- 1) To investigate the presence of sensory disturbances detectable by quantitative sensory testing (QST) including pressure pain thresholds, thermal pain thresholds and supra-threshold heat pain ratings in elders with chronic idiopathic neck pain compared to those without neck pain.
- 2) To determine psychological features (depression and anxiety) in elders with and without chronic idiopathic neck pain.

### **1.2 Hypotheses of the study**

- 1) Sensory hypersensitivity (decreased pain thresholds) as measured by QST will be present in elders with chronic idiopathic neck pain compared to those without neck pain.
- 2) The psychological features (depressive and anxiety symptoms) will be greater in elders with chronic idiopathic neck pain as compared to those without neck pain.