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Gender specific variations in the description, intensity and location of Angina Pectoris: A cross-sectional study

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ABSTRACT

Background: Some research suggests that men and women may experience Angina Pectoris (AP) differently. More research is needed to characterize AP symptoms by gender and to familiarize health care providers with them, to enable proper education, diagnostic evaluation and timely management.
Objective: This study examines gender differences in the description, intensity and location of AP in patients with CHD.
Design: A cross-sectional study was performed to compare AP patients according to gender.
Settings: This study was performed on patients residing in Tehran, who were being treated in a hospital and were admitted to cardiac units.
Participants: Five hundred patients with AP were selected. The participants were patients with AP who were diagnosed with CHD based on documented results from an angiography.
Method: Outpatients who were admitted to the cardiac units were screened. Informed consent was obtained from all study participants, who then completed the Iranian version of the AP characteristics questionnaire.
Results: Women were significantly more likely to feel pain in the left arm and hand, odds ratio 1.5 (95% CI = 1.0–2.1, $P = 0.04$), left scapula, odds ratio 2.3 (95% CI = 1.6–3.5, $P < 0.001$), and neck, odds ratio 2.8 (95% CI = 1.9–4.1, $P < 0.0001$), while controlling for demographic and clinical factors. Women were significantly more likely to choose the possible pain descriptors for describing their AP and reported significantly greater intensity than men for all the pain descriptors. Significantly higher scores for sensory, affective, total and NRS (Numeric Rating Scale) scores were observed in women ($P < 0.001$). Multiple linear regression analyses revealed that gender remained a statistically significant predictor of pain scores and NRS, while controlling for demographic and clinical factors.
Conclusion: Women and men differ with respect to description, intensity and location of AP. Educating the general public and informing health care providers about gender variation in AP may help to decrease delays in seeking medical care.

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What is already known about the topic?

- Gender may influence the pain experience. Different socialization processes related to gender may influence the way patients experience and describe pain.
- Gender differences in the language used to describe Angina Pectoris (AP) symptoms might be explained by lay beliefs about Coronary Heart Disease (CHD), and patterns of comorbidity.
- Understanding gender specific variations in AP characteristics is essential to determine if gender-specific managements are needed to reduce CHD morbidity and improve functioning and quality of life among patients.

What this paper adds

- This paper shows that women are two to three times more likely to experience pain in the left arm and hand, left scapula and neck while controlling for demographic and clinical factors.
- The paper shows that women report the pain descriptors more often than men and choose each pain descriptor more frequently.
- Women report significantly higher pain intensity scores (sensory, affective, total and NRS (Numeric Rating Scale)). Gender remains a statistically significant predictor of sensory, affective, total and NRS scores, while controlling for demographic and clinical factors.

1. Introduction

According to the WHO, Coronary Heart Disease (CHD) causes the death of "3.8 million men and 3.4 million women" annually, making it the major cause of death worldwide (Emslie, 2005, p. 382). According to these morbidity rates for men and women, there may be critical gender differences.

The existing information about CHD generally is based on male subjects (Lockyer, 2005; O'Neill and Morrow, 2001). However, in recent years, a growing interest in gender specific variations in Angina Pectoris (AP) has emerged, and it is now suggested that gender may influence AP experience.

Angina pectoris is a collection of symptoms which experienced by CHD patients. Symptoms are subjective; they reflect all the numerous conditions a patient experiences (physical, psychological and so on). For these reasons, symptoms will vary amongst patients, also those with CHD (Ekman et al., 2005).

Philpott et al. (2001) indicate that different clinical characteristics were reported by men and women during angiography. Similarly, a research by Kamp (2001) demonstrates that women are more likely to experience intense pain. He suggests that gender specific variation in AP experiences might be related to differences in biological factors and behaviors of others in society (Kamp, 2001; Miller and Newton, 2006). Vodopiutz et al. (2002) identify gender variation in presentation and descriptions of AP in women as compared with men. A further explanation is offered by Penque et al. (1998) who suggest that gender specific variations might be related to lay beliefs about CHD, and comorbidity (Penque et al., 1998). Comorbidities may mask symptoms, making diagnosis difficult (Philpott et al., 2001). Indeed, it is difficult for health care providers to interpret CHD patients' symptoms. Therefore, we should expect patients themselves to find this difficult (Lockyer, 2005).

Despite these findings and explanations, information remains limited and findings are inconsistent across existing literature sources. Yet, considering gender in the study of CHD patients is essential. The present study offered an opportunity to investigate men's and women's experiences of CHD symptoms. The results can be used to familiarize health care providers with these gender differences, leading to relevant patient education and prompt intervention.

Moreover, an understanding of gender specific variations in AP characteristics combined with proper interventions designed to symptoms relief, offers the potential to improve functioning and quality of life and to reduce morbidity among patients (Kimble et al., 2003).

Therefore, the overall aim of the study presented here was to determine gender specific variations in the characteristics of AP symptoms in patients with CHD. The objectives were: (1) To demonstrate male and female differences in location of AP, (2) To determine gender differences in the description of AP symptoms, and (3) To compare pain intensity in male and female patients.

2. Methods

A cross-sectional study was performed on patients residing in Tehran, who were being attended at Shahid Rajaei Hospital and were admitted to cardiac units. Study approvals were obtained from the Iran University of Medical Sciences Ethics Committee and the Ministry of Health and Medical Education.

2.1. Instrument

In order to evaluate symptoms in patients with AP, the Short Form-McGill Questionnaire (SF-MPQ) and drawing of the human body, which form a part of the Iranian version of the AP characteristics questionnaire, were used. Reliability and validity of the Iranian version of the SF-MPQ was confirmed in earlier studies (Najafi et al., 2008, 2009). Before utilizing the instrument in the study, a reliability test was performed for the current data set and the Cronbach's alpha was 0.83.

The questionnaire included patients' demographic characteristics (age, marital status, education level and number of children), disease duration, clinical history (Acute Myocardial Infarction (AMI), Coronary Artery Bypass Graft (CABG), Percutaneus Angioplasty (PTCA) and Stenting, and risk factors (Hypertension, smoking, hyperlipidemia, diabetes, obesity and family history of CHD). In this study hypertension was defined as an elevation of systolic and diastolic blood pressure, respectively, 140 mmHg or greater and 90 mmHg or greater or using antihypertensive drugs. The patients were considered hypertensive when their medical records revealed an elevation of blood pressure or