The Gender-Specific Effects of Modifiable Health Risk Factors on Coronary Heart Disease and Related Expenditures

This research project uses the HERO database. Of the 46,026 employees in the database 2,459 were diagnosed as having CAD through CPT and ICD-9-CM codes. This represents the study group.

A variety of risk factors, many of which are controllable through lifestyle changes, contribute to the probability of CAD and health care costs. The risks include: stress, smoking, obesity, hypertension, diabetes, lack of regular exercise, high cholesterol and family history.

While there is minimal data available on the comparative economical impact of risk factors on health care cost, there is even less when investigating this question based on gender. Because of this, the following questions are addressed:

- Based on gender, what are the absolute and relative costs associated with each risk factor when treating patients with CAD? What are the differences across risk factors? Are there differences in costs when comparing males and females? If so, what are the differences?
- Based on gender, what is the occurrence of CAD and hospitalization due to CAD? Are there differences when comparing males and females? If so, what are the differences?
- Based on odds ratios, which risk factors are most prevalent among a group of employees with CAD? What is the rank order?

Among this large, multi-employer group of workers who completed a health risk appraisal (HRA), the difference between the occurrence of CAD between males (6.3%) and females (5.7%) was only 0.6%. Among males, smoking was the number one predictor of heart disease, while with women; profound obesity and uncontrolled stress were the prime predictors. There was no level of consistency between men and women relative to the association between health risks and costs. For example, men reporting to be depressed most of the time had total health care costs 91% more than men who

reported not being depressed. Among women, those reporting to be depressed most of the time had health care costs only 5% more than those reporting not being depressed.

Behavioral change intervention application has usually been the same for men and women. If the intent is to provide interventions based on the potential for maximum reduction in medical costs, occurrence of CAD and hospitalization due to CAD, this study suggests different intervention goals between males and females may be appropriate.

This study was funded through grant number NAG-6218 from the National Aeronautics and Space Administration (NASA) and published in the November 2000 issue of the Journal of Occupational and Environmental Medicine.

Citation: Wasserman J, Whitmer WR, Bazzarre TL, Kennedy ST, Merrick N, Goetzel RZ, Dunn RL, Ozminkowsky RJ, HERO Research Committee. Gender-specific effects of modifiable health risk factors on coronary heart disease and related expenditures. JOEM. 2000;42(11):1060-1069.