

Study reveals that signs of heart disease are attributed to stress more frequently in women than men

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Research presented at the 20th annual Transcatheter Cardiovascular Therapeutics (TCT) scientific symposium, sponsored by the Cardiovascular Research Foundation (CRF), found that coronary heart disease (CHD) symptoms presented in the context of a stressful life event were identified as psychogenic in origin when presented by women and organic in origin when presented by men. The study could help explain why there is often a delay in the assessment of women with heart disease.

"We know that there is a delay in diagnosing CHD in women and this is an important step forward in understanding why," said Alexandra J. Lansky, M.D., director of the Women's Health Initiative at CRF, director of Clinical Services at the Center for Interventional Vascular Therapy, a cardiologist at NewYork-Presbyterian Hospital/Columbia University Medical Center, and an associate professor of clinical medicine at Columbia University College of Physicians and Surgeons.

The investigation – "Gender Bias in the Diagnosis, Treatment, and Interpretation of CHD Symptoms: Two Experimental Studies with Internists and Family Physicians," was led by Gabrielle R. Chiaramonte, Ph.D., postdoctoral associate at the Weill Medical College of Cornell University and Clinical Fellow at NewYork-Presbyterian Hospital. The study examined the effects of patients' gender and the context of how CHD symptoms are presented (with/without mention of life stressors

and anxiety) on primary care physicians' patient evaluations.

"The selection of internists and family physicians was particularly relevant as they are generally the first medical professionals to assess patients' symptoms and to make treatment recommendations. A greater understanding of factors contributing to gender bias in CHD assessment in this group would thus be especially meaningful," said Dr. Chiaramonte.

The researchers hypothesized that the presence of life stressors/anxiety would shift the interpretation of women's – but not men's – CHD symptoms, so that these would be perceived to have a psychogenic etiology.

"The greater prevalence of anxiety disorders in women, along with the greater likelihood that women will discuss stressors with their physicians, and the overlap of CHD and anxiety symptoms, contribute to this shift in interpretation," Dr. Chiaramonte said.

In the studies, 87 internists (Study 1) and 143 family physicians (Study 2) read a vignette of a 47-year-old male or a 56-year-old female (by age at equal risk for CHD) presenting a multitude of CHD symptoms and risk factors. Half the vignettes included sentences indicating the patient had recently experienced a life stressor and that they appeared anxious. Each physician read one version of the vignette and then specified a diagnosis, made treatment recommendations, and indicated the etiology of symptoms.

As the investigators predicted, results showed a gender bias when CHD symptoms were presented in the context of stress, with fewer women receiving CHD diagnoses (15% versus 56%), cardiologist referrals (30% versus 62%), and prescriptions of cardiac medication (13% versus 47%) than men. No evidence of a bias was observed when CHD symptoms were presented without the stress. Results also showed that the presence

of stress shifted the interpretation of women's chest pain, shortness of breath and irregular heart rate so that these were thought to have a psychogenic origin. By contrast, men's symptoms were perceived as organic whether or not stressors were present.

Dr. Chiaramonte stated, "For women, the presence of stress or anxiety drives the interpretation of accompanying symptoms so that symptoms such as chest pain or shortness of breath undergo a 'meaning shift' when presented in the context of stress or anxiety and they are perceived as a manifestation of the stress or anxiety and not as CHD symptoms. For men, cardiac symptoms drive the interpretation of accompanying symptoms so that anxiety or stress is perceived (rightly so) as a risk factor for CHD and may in fact augment the CHD assessment. The presence of anxiety or stress in men does not deter from the CHD assessment; for women, it appears to preclude a CHD assessment."

Dr. Chiaramonte warned that, "Given the overlap of CHD and anxiety symptoms (e.g., chest tightness common in both) and given the higher prevalence of anxiety symptoms or disorders in women, physicians need to be aware of gender differences in symptom presentation and they need to be especially careful to rule out CHD before considering an anxiety diagnosis. In the case of women, anxiety appears to have a pervasive influence on medical judgments regardless of the gender of the health care provider making the evaluations."

Ronald Friend, Ph.D., co-investigator, Professor of Psychology at Stony Brook University and Oregon Health & Sciences University, School of Nursing, added: "The assessment of women's CHD is further complicated by evidence that women sometimes present with 'atypical' CHD symptoms and that chest pain, a hallmark symptom in men, is less common in women. We recently conducted an additional study with 142 family physicians examining the influence of stress on the assessment of patients presenting atypical CHD symptoms. Results showed a different

dynamic in this case: Women were more likely than men to receive a GI rather than a CHD diagnosis regardless of the presence of stress; the addition of stress increased GI diagnoses in both men and women. Given that women are more likely to present with atypical symptoms (and stress), these preliminary results are cause for concern."

Prior to conducting the two studies reported here, the researchers had tested their hypothesis with 99 first year medical students, 82 third and fourth year medical students, and 122 physician assistant students. The investigators were surprised to find nearly identical results whether the participants surveyed were first year medical students or experienced practicing family physicians and internists.

Dr. Chiaramonte concluded, "The consistent results observed with participants of varying clinical experience attest to the strength of the research and the pervasiveness of the effect. Our results suggest the need for the development of educational initiatives aimed at improving health care providers' understanding of gender differences in symptom presentation."

Source: Cardiovascular Research Foundation

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