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Sex Differences in Cardiovascular Health: Does Sexism Influence Women's Health?

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Abstract

This commentary provides a brief overview of theory and research that supports the idea that sexism may be related to the disproportionate negative cardiovascular health outcomes in women. It describes the sexism as a stressor and outlines its association with a variety of health outcomes as evidence for why sex disparities should be examined within the context of pervasive inequities. To date, population-based studies have not explicitly examined the relationship between sexism and CVD but smaller studies have yielded fairly consistent results. It is suggested that future research should aim to examine the influence of two types of sexism (i.e., hostile and benevolent) and that daily or within-day designs be employed to assess cognitive, behavioral, and physiological responses to everyday sexist experiences.

Keywords

Cardiovascular Disease; Women's Health; Sex Differences; Sexism

In the United States cardiovascular disease (CVD) mortality rates in women have exceeded those in men since 1984¹. In fact, while the incidence of death due to CVD has decreased in recent years among men, CVD remains the leading cause of mortality and disability among women. For example, in comparing data from the National Health and Nutrition Estimation Survey (NHANES) III (1988–94) and NHANES IV (1999–2002), more postmenopausal women were hypertensive than age-matched men. Moreover, fewer postmenopausal women than men had their blood pressure controlled to goal, even though more women than men had seen their health care professional within the previous 6 months². Investigative work into potential mechanisms that may contribute to these gender differences in CVD has focused on “traditional risk factors” such as smoking, metabolic syndrome, oral contraceptives, and lower levels of estrogen after menopause. However, based on the NHANES data it likely that either women are not being treated as aggressively for their CVD, or other mechanisms that are not common in men may contribute to the CVD.

Based on the premise that gender differences in mechanisms play a role in the higher incidence of CVD in women, and drawing upon past work that has investigated racial and ethnic disparities in health, we propose that *sexism*, a psychosocial factor experienced by

many women, should be examined more thoroughly as a risk factor for CVD. This proposal is in accord with the World Health Organization's (WHO) focus on social determinants of health as part of a larger plan to remediate gender inequities in health within a generation (WHO, 2008)³. In order to help meet this goal, researchers should aim to uncover additional, "non-standard" factors that may contribute to differences in cardiovascular health outcomes among women and men.

Sex and Gender-Based Medicine and Sexism

Sex and gender-based medicine is the "study of how diseases differ between men and women in terms of prevention, clinical signs, therapeutic approach, prognosis, psychological and social impact"⁴. While studies are published almost daily showing sex and gender differences in medicine, there is still controversy as to the utility and necessity of investigating sex and gender differences to better understand the etiology of health disparities in general^{4,5}. In addition, medical and health professional curricula are sorely lacking in providing future practitioners with information regarding sex and gender differences in medicine⁶. This lack of appreciation and understanding of the sex and gender differences in medicine is also evident in current guidelines for medical care, which often do not reflect these differences. For example, despite the fact that blood pressure in postmenopausal women is not as well controlled as in men, the guidelines for treating blood pressure in elderly men and women are not different.

Despite the lack of consensus on whether to incorporate or even investigate sex and gender differences in treatment paradigms, research investigating social determinants of health has uncovered evidence that women's symptoms are often dismissed by medical professionals. For example, research has shown that coronary interventions are used significantly less frequently in women presenting with acute coronary syndrome^{7–9}. These findings, sometimes referred to as examples of *medical sexism*, have inspired research and interventions aimed at reducing the biases displayed by health care professionals, so as to reduce sex disparities in health care management. To date, much less research has focused on the patient's perspective and experiences during these encounters; that is, how exactly does encountering sexism--prejudice, stereotyping, or discrimination on the basis of one's sex--affect an individual's health outcomes? This neglected dimension may be particularly useful in elucidating key factors that contribute to sex disparities in health and health care.

Hostile and Benevolent Sexism

Although both women and men can experience sexism, women are more frequently the target of this type of bias, despite the perceived advances in women's rights in the last few decades. Because of its pervasiveness, sexism toward women has been conceptualized as a daily "hassle" that may have dire implications for women's mental and physical health^{10, 11, 12}. This is in accord with past theory and research that has conceptualized exposure to prejudice, stereotyping, and discrimination as stressors^{13, 14, 15}.

Behavioral scientists have empirically identified two related but distinct types of sexism that may be especially relevant to sex and gender health disparities: *hostile and benevolent sexism*¹⁶. Hostile sexism is the antipathetic expression of sexism, in which men are

antagonistic towards women who threaten their superiority. Benevolent sexism is the paternalistic expression of sexism, where men express restrictive attitudes towards women, rooted ostensibly in a desire to protect or cherish them^{17,18}. For example, a woman might be denied a job as a bond salesperson by a hiring manager motivated by (a) his dislike of female coworkers (in the case of hostile sexism) or (b) by a desire to protect the woman from what he considers to be the trying emotional demands of the job (in the case of benevolent sexism). Both forms of sexism originate from the view that women are inferior to men. To date, the majority of research examining the relationship between sexism and overall wellness has focused mainly on the hostile forms of sexism, and the influence of benevolent sexism on health has not been determined.

Everyday sexism, may be very similar to what stress and coping researchers refer to as daily hassles and stressful life events, both of which are associated with negative mental health outcomes^{19,20} and health behaviors²¹. For example, cross-sectional research has revealed a positive association between experiences of sexism and post-traumatic stress disorder (PTSD)²², psychological distress²³, and the frequency of smoking and drinking behavior²⁴ among women. Further, each of these negative health outcomes have been explicitly identified as a significant risk factor associated with higher CVD mortality in women.

Thus social stressors may lead not only to the psychological responses previously outlined, but also to physiological responses and adaptations²⁵. Townsend et al.²⁶ reported that exposure to sexism is associated with an immediate cardiovascular stress response. Over time, these adaptations to the stress of sexism may result in dysregulation of various physiological systems²⁴. For example, stressors (including social stressors) activate the hypothalamic-pituitary-adrenal (HPA) axis with the end product, cortisol, responsible for mobilizing energy²⁷. While adaptive in the short term and important in the “fight or flight” response, chronic activation of the HPA axis in response to stress can lead to dysregulation²⁵ that is a risk factor not only for mental health issues^{28,29}, but also for a variety of negative health outcomes, including cardiovascular risk factors such as obesity³⁰ and hypertension³¹.

How to Evaluate Cumulative Effects of Sexism

Few investigators to date have taken into account the role of sexism when they study potential mechanisms responsible for negative health outcomes. One way to evaluate the cumulative effects of sexism may be to employ daily, or within-day, event measurement study designs that enable the longitudinal assessment of an individual's experiences, an approach used in previous studies to assess bodily states in response to racism. For example, Lepore and Revenson³² examined the relationship between talking about hypothetical social stressors and cardiovascular reactivity among Black and White women, and showed that Blacks and Whites responded differently to race-related social stress such that Blacks displayed increased level of physiological stress. Unfortunately, this work did not capture cognitive or behavioral responses to the stressors. It is worth noting that such studies are not without disadvantages. For example, event measurement studies tend to be quite laborious for researchers and participants. However, when carefully designed and implemented, the advantages outweigh the disadvantages. Some advantages include having the capacity to

record reactions to sexist events in real time instead of by retrospective recall, or as a reaction to an artificial or manipulated sexist event, recording sexist experiences across a variety of contexts, and accounting for the influence of multiple sexist events³³.

Conclusions

When one looks at all the factors that may play a role in the development of CVD, the complexity is humbling. However, investigators should be encouraged to expand their physiological studies to evaluate the unique and potentially important contributions of both hostile and (perhaps even more sinister) benevolent sexism to CVD in women. To fulfill this obligation to improve women's health outcomes, we propose that future work should aim to: (1) Assess the role of sexism and other social group-related stressors in health disparities. In the case of sexism, researchers should make certain to account for both hostile and benevolent types of sexism. (2) Incorporate event or daily methodology to examine the life experiences of members of undervalued groups, such as women, to enable better understanding of the immediate and cumulative effects of stigma-related stress³³. While these studies will not be trivial to perform, they may provide novel insights into the reasons why CVD morbidity and mortality continue to increase in women, but not men.

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