

## Editorial

## Biology, Culture and Society, Factors Configuring Health From a Gender Perspective. Has Cardiology Overcome the Challenge?



Biología, cultura y sociedad, ingredientes que configuran la perspectiva de género en salud, ¿un reto superado en cardiología?

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Article history:

Available online 31 May 2019

### GENDER EQUITY AND HEALTH CARE: SOCIOCULTURAL DETERMINANTS

Throughout the course of the 20th century, women (and society as a whole) have progressively attained greater levels of equality between the sexes regarding civil rights and opportunities in education, work, and personal development. In the last few decades, we have witnessed the gradual incorporation of women in virtually all employment sectors, and their placement, on their own merits, in positions of responsibility that had been implicitly vetoed to the female sex previously.

Nonetheless, for years the medical field has shown concern about whether the equality seen in other social areas can also be applied to the health care setting.<sup>1</sup> In this line, a recent World Health Organization report<sup>2</sup> included the expression “gender as a structural determinant of health”. According to this concept, the social stratification of women, their tendency to receive less education, work in lower-paying jobs, and have higher poverty rates and greater family responsibilities, together with discriminatory social practices, have a decisive influence on poorer health outcomes. Cultural norms, as well as a person's health-related beliefs, confidence in the health system, socioeconomic level, and even the characteristics and use of language differ between the sexes. All these factors contribute to shaping gender, and they can determine why, when, and how people access health care.

In the field of cardiology, a recent review by Shaw et al.<sup>3</sup> compiled evidence demonstrating a lack of equity between the sexes in cardiovascular care. In the area of ischemic heart disease, women generally take longer to request assistance, endure a greater delay in arriving at the correct diagnosis, and receive suboptimal treatment compared with their male counterparts.<sup>4</sup> However, the data show a more favorable prognosis for long-term survival in women than in men with an ischemic event.<sup>5</sup> In the area of arrhythmias—and serving as an example of the current relevance of the topic—a few months ago the main scientific

societies for cardiac electrophysiology (European Heart Rhythm Association, Heart Rhythm Society, and Asia Pacific Heart Rhythm Society)<sup>6</sup> published a consensus document providing an overview of sex/gender differences in the pathophysiology, epidemiology, and treatment of cardiac arrhythmias. In addition, this document described factors that limit access to treatments, developed possible strategies to improve health care for women, and advocated the design of future clinical trials to investigate these issues.

### SEX EQUITY AND HEALTH CARE: BIOLOGICAL DETERMINANTS

When referring to gender equity in health care, we cannot only consider sociocultural aspects. We should ask ourselves whether the onset of disease states is comparable between men and women, given that we use male sex as a standard: Men have been the subject of studies on disease throughout the history of medicine. In this regard, women start at a clear disadvantage in their “disease phenotype”, being notably under-represented in most studies, clinical trials, and clinical practice guidelines, although there are some commendable exceptions, such as the 2016 guidelines for the treatment of atrial fibrillation (AF) of the European Society of Cardiology, which includes a section on gender-related recommendations.<sup>7</sup> Thus, the observations in the literature could be biased because of the sociocultural factors described in the previous section, which would affect the type of access to health care among the women included in the studies.<sup>3</sup> Reported data indicate that biological differences may intervene in cardiovascular health (mainly mediation by sex hormones in response to endothelial inflammation, as described in the WISE<sup>8</sup> study in the United States). Nonetheless, it remains difficult to establish which differences in cardiovascular health are due to purely biological factors (sex), which are due to social and environmental factors (gender), and which interactions between these elements lead to the differing clinical outcomes found between men and women. In summary, research on sex, gender, and health should be performed in a stratified manner according to social-economic-cultural segments and applied to specific countries or regions to be able to determine “How much is sex and how much is gender?” in terms of health.

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<https://doi.org/10.1016/j.rec.2019.03.011>

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## GENDER EQUITY AND CARDIOVASCULAR HEALTH CARE IN SPAIN

For some years now, information on cardiovascular disease in women has been available in our setting. This includes epidemiologic and clinical data on diseases such as hypertension, acute coronary syndrome, valvular heart disease, heart failure, and heart transplant, which can be found in a dedicated supplement of *Revista Española de Cardiología*.<sup>9</sup> However, until recently there was little information on 2 very prevalent conditions in cardiology: AF and stable angina. In a recent article in *Revista Española de Cardiología*, Murga-Eizagaetxebarria et al.<sup>10</sup> reported the results of a subanalysis of the OFRECE study,<sup>11,12</sup> whose objective, predefined in the original study design, was to analyze gender differences in medical consultations for chest pain or palpitations, and investigate potential inequities in the care and treatment provided to each sex. The OFRECE<sup>11,12</sup> study, published between 2014 and 2015, and whose primary objective was to determine the prevalence of AF<sup>11</sup> and stable angina<sup>12</sup> in Spain, included around 8400 individuals from the general Spanish population > 40 years of age (52% women), randomly selected using the health cards from 425 primary care consulting rooms in 46 Spanish provinces.

A major finding among the results of the study by Murga-Eizagaetxebarria et al.<sup>10</sup> is the considerably higher rate of previous consultations for palpitations in women (almost double that of men), with no differences between the sexes in previous consultations for chest pain. Among patients consulting previously for these 2 symptoms, there were epidemiologic differences between the sexes at baseline, namely a higher prevalence of cardiovascular risk factors and disease in men, and central obesity and thyroid disease in women. In the medical visits for both these symptoms, women tended to consult more often with a primary care physician, and less frequently in the emergency room or directly with a cardiologist. Furthermore, women underwent fewer diagnostic tests (echocardiography) and were referred less frequently to a cardiologist. In the specific case of visits for chest pain, men were hospitalized and received treatment or had their medication adjusted more often than women. Stable angina, confirmed by the study cardiologist, was diagnosed in 1.6% of men and 1.2% of women ( $P=.070$ ), whereas AF or other tachyarrhythmias were found in 22% of men and 12.2% of women ( $P<.001$ ).

The strength of the study by Murga-Eizagaetxebarria et al.<sup>10</sup> lies in the final analysis of these data according to several essential factors: age, presence of cardiovascular risk factors, background of established cardiovascular disease, and confirmed diagnosis of stable angina or AF by the study cardiologist. When all these aspects were taken into consideration and “true” probabilities (odds ratios) were calculated of referral to a cardiologist, echocardiography testing, hospitalization, and start or modification of treatment in the groups consulting for chest pain or palpitations, the putative differences between the sexes disappeared.

This is excellent news, as it supports the view that our health system is fairly equitable in terms of initial access, diagnostic capability, and the treatment provided to both sexes. However, as the authors acknowledge, the study has some important methodological limitations. The cardiologists responsible for confirming the diagnoses (stable angina or AF), which were used in the adjusted probability analysis, were not blinded to the patient's sex; hence, a biased clinical interpretation of the symptoms cannot be excluded. In effect, although the prevalence of *stable angina I* (“safe angina” evaluated using the Rose questionnaire<sup>13,14</sup>) was higher in women in the OFRECE study, the prevalence of “true” stable angina, *stable angina II* (confirmed after cardiologic assessment), did not differ from that of men. These findings indicate that closed

tests are useful, but far from perfect when used to classify symptoms according to sex. This may be particularly relevant in the case of arrhythmias, as the questionnaire used in OFRECE focusses on the diagnosis of AF, but does not take into account other gender-related variables, such as the prevalence of anxiety disorders in women, which would explain the larger number of consultations for palpitations.

## THE FUTURE IN GENDER EQUITY AND HEALTH CARE

In conclusion, although an underlying gender bias cannot be completely excluded in the study by Murga-Eizagaetxebarria et al.,<sup>10</sup> the overall message regarding gender equity in our health system is optimistic. New, currently emerging situations will affect future interpretations of the results on this topic and will necessitate new research designs. Current education is mainly focused on equal opportunities between men and women for personal development, and women, in turn, have acquired lifestyle behavior traditionally associated with men, which can be beneficial (eg, sports practices) or harmful (eg, work stress and toxic habits). These considerations will likely influence factors determining the way women access and use health care, and may partially lead to greater similarities with the situation in men. Why, how, and when health care is used will surely change for women in the coming decades. However, there will still be evident differences in certain social, economic, and cultural areas (hence, the importance of performing stratified studies in this sense), for which the health system must be properly prepared if it wishes to claim equity of care. Finally, the increasingly greater presence of women in all health professions could begin to have an impact on how patient-reported symptoms are interpreted, a factor that, in itself, determines how health care is accessed.

## CONFLICTS OF INTEREST

None declared.

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