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COMMENTARY

Sex and gender differences in COPD: challenging the stereotypes

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The relationship of sex and gender to health and disease is complex, and varies across an individual's lifespan. This has implications for (potentially) differing patterns of disease prevalence, different degrees of severity, and different patterns of mortality and morbidity between men and women.^{1,2}

Sex denotes the differences attributed to biological origins alone, while gender refers to the social and cultural influences that lead to differences between women and men.³

Chronic obstructive pulmonary disease (COPD) is an increasing cause of morbidity and mortality worldwide. Although COPD has historically been considered a disease of male smokers, it now clearly impacts on both sexes.⁴ As Ohar, Fromer, & Donohue point out in this helpful review,⁵ the paradigm of COPD is changing from a male-predominant two-category disorder, to a disorder characterised by multiple co-morbidities with a growing female prevalence.

Careful evaluation, and a raised awareness of the possibility that sex or gender (or both) may influence COPD susceptibility and progression, is of critical importance for two main reasons: firstly, because the potential future impact of the disease may have been underestimated;⁴ and secondly, because the condition is primarily diagnosed and managed by general practitioners (GPs). GPs are as vulnerable as their patients to sex and gender stereotypes, and this can impact on information processing and decision-making.

This review⁵ highlights key research areas in COPD where sex and gender stereotypes can be challenged – including disease susceptibility, symptoms, treatment, prognosis, and diagnosis. Although biological determinants of sex and age differences in airway behaviour (dimensional, immunological, and hormonal) have been known for many years,⁶ there are still major gaps in our knowledge about COPD phenotypes. In particular, little is known about the mechanisms and

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implications of a possible gender difference in COPD. Although much research suggests that disease and health problems may be experienced very differently by men and women – with different implications in terms of lifestyle, health status, and outcomes^{7,8} – the demonstration of gender differences in COPD can be challenging, especially in cross-sectional and case-control studies. For example, the proportion of females to males is typically lower in many COPD studies, and female participants have typically smoked significantly less than men.⁴

Although it is helpful to dichotomise male/female differences into those that are potentially sex-related versus those that are gender-related, it is difficult to disentangle the relative contribution of sex/gender because of the complexity of their interactions. For example, the authors draw attention to gender differences in self-reporting, perception of quality of life, and emotional impact (e.g. depression, anxiety) in COPD.⁵ Such differences in self-report and even prevalence could, at least in part, be explained by sex differences in the physiological response to stress, and gender differences in the types of stressors to which an individual is likely to be exposed. In turn, the nature of stressors may influence sex differences in physiological reactivity to stress,⁹ with gender-specific impact on perception of symptoms, information processing, and role expectations.¹⁰

The value of integrated approaches has been clearly demonstrated in recent years. It is now generally recognised that failure to incorporate sex and gender in research designs can result in failures of both effectiveness and efficiency.¹¹ The new paradigm of evidence-based medicine has underscored this awareness and driven the debate on the limited generalisability of findings that do not take sex and gender into account in clinical research. This clinical review paper is a welcome addition to the debate.

Conflicts of interest

The author declares that she has no conflicts of interest in relation to this article.

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