Clinical Kidney Journal, 2023, vol. 0, no. 0, 1–2

https://doi.org/10.1093/ckj/sfad102
Advance Access Publication Date: 1 May 2023
Editorial Comment

The Forgotten Sex
gender disparities in kidney disease

EDITORIAL COMMENT

'The forgotten sex': gender disparities in kidney disease

Kate I. Stevens [1], Francesca Mallamaci[2], Alberto Ortiz[3,4], Jordi Bover[5,6], Pierre Delanaye[7], Roser Torra[8] and Mario Cozzolino[9]

[1]Glasgow Renal and Transplant Unit, Queen Elizabeth University Hospital, Glasgow, UK, [2]Nefrologia and CNR Unit, Grande Ospedale Metropolitano Reggio Calabria, Italy, [3]IIS-Fundacion Jimenez Diaz- UAM, Madrid, Spain, [4]Department of Medicine, Universidad Autonoma de Madrid, Madrid, Spain, [5]Nephrology Department, University Hospital Germans Trias I Pujol, Badalona, Spain, [6]REMAR-IGTP Group, Research Institute Germans Trias i Pujol (IGTP), Badalona, Spain, [7]Department of Nephrology-Dialysis-Transplantation, University of Liège, CHU Sart Tilman, Liège, Belgium, [8]Inherited Kidney Disorders, Department of Nephrology, Fundació Puigvert, IIB Sant Pau, Universitat Autònoma de Barcelona, Barcelona, Spain and [9]Renal Division, ASST Santi Paolo e Carlo, Department of Health Sciences, University of Milan, Milan, Italy

Correspondence to: Kate I. Stevens; E-mail: kate.stevens@glasgow.ac.uk

Historically in anthropology, the female sex was considered the 'fair sex' or the 'weak sex', but medicine tells a different story. Cardiovascular (CV) disease represents one of the most common causes of morbidity and mortality in the Western world and the prevalence continues to increase. Women hold a more advantageous position in terms of CV risk than men because throughout all age strata, CV disease is more common in men than in women [1]. Despite this, CV disease remains a leading cause of death in women, perhaps in part because of the misperception that it is a man's disease. As a result, cardiologists pay far more attention than other specialties to sex differences in the aetiology, pathogenesis and management of disease.

Sex is a biological construct and gender is based on socially defined features [2]. Why is it that there is a paucity of studies exploring sex and gender differences in the literature and why are women, based on either definition, often forgotten in medicine?

Women are the majority in the world population, yet they are all too often underrepresented in clinical trials [3]. This is particularly sobering in nephrology, where women have a higher prevalence than men of chronic kidney disease (CKD) across all stages and there is evidence that progression of CKD is affected by sex [4]. This in itself is controversial, because some believe that glomerular filtration rate (GFR) may be underestimated in women depending upon the formula used to calculate it and lower urinary creatinine excretion in women may magnify urinary albumin:creatinine ratios [5, 6].

Pregnancy is an obvious CKD-related sex disparity. Historically, women with advanced kidney disease rarely became pregnant. Indeed, women were often actively discouraged from considering pregnancy by their healthcare team due to the associated risks: the high incidence of adverse maternal and foetal outcomes and flare and progression of existing kidney disease. It is now apparent that with proper planning and pre-pregnancy counselling, while the risk remains high, steps can be taken to lower the risk, making better outcomes possible [7].

Gender disparity and stereotypes can negatively impact upon all aspects of healthcare, with delays in diagnosis and treatment, poorer quality of care and resultant increased morbidity and mortality. Broadly speaking, this bias affects women more severely than men, but any bias contributes to health inequity and has a negative impact for everyone.

Thus the time is now to make gender inequality a priority in nephrology. This dedicated *CKJ* series explores gender bias, why it occurs, how it manifests, its impact and potential solutions in the setting of kidney disease.

Received: 27.4.2023; Editorial decision: 27.4.2023

The topics covered include disparities and differences in diagnosis, access to healthcare, the aetiology of kidney disease, the pathogenesis of CKD complications (including bone disease, sexual dysfunction, psychological issues and malignancy), access to dialysis and discrepancies in dialysis modality (e.g. home-based therapies versus centre-based) and differences in kidney transplantation and living kidney donation.

CONFLICT OF INTEREST STATEMENT

M.C. is the ad interim editor-in-chief of *CKJ*. A.O. is one of the previous editors-in-chief of *CKJ*. The other authors are associate editors of *CKJ*.

REFERENCES

1. Bots SH, Peters SAE, Woodward M. Sex differences in coronary heart disease and stroke mortality: a global assessment of the effect of ageing between 1980 and 2010. *BMJ Glob Health* 2017;**2**:e000298. https://gh.bmj.com/content/2/2/e000298
2. World Health Organization. Gender and health. https://www.who.int/health-topics/gender#tab=tab_1
3. Daitch V, Turjeman A, Poran I *et al*. Underrepresentation of women in randomized controlled trials: a systematic review and meta-analysis. *Trials* 2022;**23**:1038. https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-022-07004-2
4. Lewandowski MJ, Krenn S, Kurnikowski A *et al*. Chronic kidney disease is more prevalent among women but more men than women are under nephrological care: analysis from six outpatient clinics in Austria 2019. *Wien Klin Wochenschr* 2023;**135**:89–96. https://link.springer.com/article/10.1007/s00508-022-02074-3
5. Beridze G, Vetrano DL, Marengoni A *et al*. Concordance and discrepancies among 5 creatinine-based equations for assessing estimated glomerular filtration rate in older adults. *JAMA Netw Open* 2023;**6**:e234211. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2802749
6. Bjornstad P, Karger AB, Maahs DM. Measured GFR in routine clinical practice—the promise of dried blood spots. *Adv Chronic Kidney Dis* 2018;**25**:76–83. https://www.akdh.org/article/S1548-5595(17)30163-5/fulltext
7. Wiles K, Chappell L, Clark K *et al*. Clinical practice guideline on pregnancy and renal disease. *BMC Nephrol* 2019;**20**:401. https://bmcnephrol.biomedcentral.com/articles/10.1186/s12882-019-1560-2