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A Closer Look at Sex/Gender Disparity in Kidney Transplantation

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The recent paper by Harding *et al.*[1] in KI Reports, "Sex/Gender Disparities in Early Transplant Access by Attributed Cause of Kidney Disease–Evidence from a Multi-Regional Cohort in the Southeast United States," examines sex/gender disparities in access to transplant across a spectrum of chronic kidney disease etiologies in the Southeastern United States. It is known that despite similar or better transplant outcomes, women are less likely to be waitlisted or receive a kidney transplant compared to men.[2,3] However, it has been unclear at which steps of the transplant process this occurs. Kidney transplantation is a multistep referral, evaluation, waitlisting, and transplant process. Because multiple factors affect the ability of an individual to obtain a kidney transplant, clinical, socioeconomic, psychological, and other factors may affect one or all these steps. Because certain kidney diseases affect men and women disproportionately, the etiology of chronic kidney disease also has the potential to cause some of the observed disparity. Lastly, other factors such as sex/gender norms and stigma could also factor into this disparity.[4] Since providing equitable access to kidney transplantation is a priority, delineating the factors that cause sex/gender disparity and affect the transplantation is paramount.

Previous work by the authors does shed some light on this subject. In the Southeastern United States, women are 14% and 6% less likely[5] to be referred and evaluated for a kidney transplant compared to men, indicating that upstream steps in the transplant process may play a role. Another study found that women with end-stage kidney disease from type 2 diabetes were 27% less likely to be waitlisted and 11% less likely to access a transplant or kidney transplant once waitlisted, indicating that perhaps sex/gender disparities are unequally distributed among the different etiologies of chronic kidney disease.[2] The recent paper by Harding *et al.*[1] paper builds on this existing knowledge by examining inequalities according to the chronic kidney disease etiology at each step of the transplant process.

Utilizing data from the United States Renal Data System, the authors evaluated patients initiating kidney replacement therapy for new-onset end-stage kidney disease in the Southeastern United States Network 6 comprised of Georgia, North Carolina, and South Carolina.

They linked individual patient information and analyzed the percentage of those referred, evaluated, and waitlisted for a kidney transplant. They also included the cause of end-stage kidney disease in their analysis–type 2 diabetes, type 1 diabetes, hypertension, glomerulonephritis, cystic disease, and others. They also evaluated other factors such as ethnicity, body mass index, and comorbidities like congestive heart failure, diabetes, atherosclerotic heart disease, cerebrovascular disease, peripheral vascular disease, and cancer. In total, 43,548 patients initiating dialysis were included in the final analysis. The mean age was 58.8 years, and 75% had kidney disease attributed to type 2 diabetes or hypertension.

Women with kidney disease attributed to type 2 diabetes were 13%, 14%, and 14% less likely to be referred, evaluated, and waitlisted, respectively. Women with kidney disease attributed to hypertension were 14% and 8% less likely to be referred and evaluated but similarly likely to be waitlisted once evaluated. In sum, the findings of this study show that upstream steps in the kidney transplant process are a primary source of transplant disparity in women, and this disparity is specific to those with kidney disease from type 2 diabetes or hypertension.

Although patients with type 2 diabetes or hypertension have an

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elevated risk for cardiovascular disease, cardiovascular comorbidities were similar among men and women in this study, indicating that this is not the source of the disparity. In addition, although those with type 2 diabetes or hypertension are more likely to be obese compared to those with other causes of end-stage kidney disease, prior work as well as the current study show that women with obesity have reduced access to transplants compared to men with the same body mass index.

This study correlates well with past literature that found that women with type 2 diabetes were 27% less likely to be waitlisted and 11% less likely to access a diseased donor kidney transplant once waitlisted in men.[2] The current study showed attenuated results in comparison, which are attributable to a shorter follow-up time and the fact that the present study occurred after the advent of the kidney allocation system introduced in December 2014.

So, what are the reasons for this disparity? There are likely many social determinants that could lead to this. In this study, older women were less likely to be referred or evaluated for a kidney transplant compared to men of the same age. Differences in frailty could be the root cause of this, but frailty was not assessed in the current study, limiting the evaluation of its role. Various social determinants of health likely play a prominent role in sex/gender disparity in transplant. It will be enlightening to decipher more specific factors that cause this disparity and determine the highest-yield factors to address. Identifying the main steps of the kidney transplant that foster inequality is the first step, and this study provides solid information on this. This study and future research will help inform policy decision-making and initiatives to broaden access to kidney transplantation.

DISCLOSURE

All the authors declared no competing interests.

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