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Association of Marital Status with Chronic Kidney Disease: Analysis of the 2017-2020 National Health and Nutrition Examination Survey

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Objectives : Socio-cultural factors contribute to CKD risk; however, the association of marital status with CKD in a nationally representative population is unknown. We aim to examine the association between marital status and the risk of CKD in the general population.
Methods : A cross-sectional study using the 2017-2020 NHANES data included marital status and serum creatinine. The study population was categorized into 2 groups, including married (married or living with partners) or unmarried (never married or were widowed, divorced, or separated). The association between marital status and CKD, defined by 2021 CKD-EPI eGFR of <60 mL/min/1.73 m^2 was examined by multiple logistic regression.
Results : Of 9,222 participants ≥18 years old with reported marital status, mean±SD age was 51±18 years and 51.38% were female. 57% and 43% were married and unmarried, respectively and 9.69% had CKD. Mean eGFR of married participants was significantly higher than those of unmarried participants ($mean_{eGFR\text{-}married}$ 103±39, $mean_{eGFR\text{-}unmarried}$ 97±37; $mead_{difference}$ -6.11±0.87; P <0.0001; Figure1,2A&2B). Compared to un-married participants, those with married status had 34% lower odds of having CKD (OR 0.66; 95%CI 0.57, 0.75). After adjusting for age, gender, race/ethnicity, level of education, BMI, history of diabetes, hypertension, and hyperlipidemia, urinary microalbumin:creatinine ratio, and an interaction term between marital status and age (<60 vs. ≥60), married participants had 40% lower odds of CKD compared to those with non-married status (adjusted OR 0.60; 95%CI 0.42, 0.86). Age was identified as an effect modifier with a higher risk of CKD observed in participants ≥60 years old (adjusted OR 1.63; 95%CI 1.08, 2.45; P 0.019). There was no indication for effect modification of marital status and other co-variates.
Conclusions : Married status is associated with a lower risk of stage 3 CKD in younger participants. While marital status may reflect social support, further studies are required to explore the underlying marital status–CKD association.

Figure 1.jpg

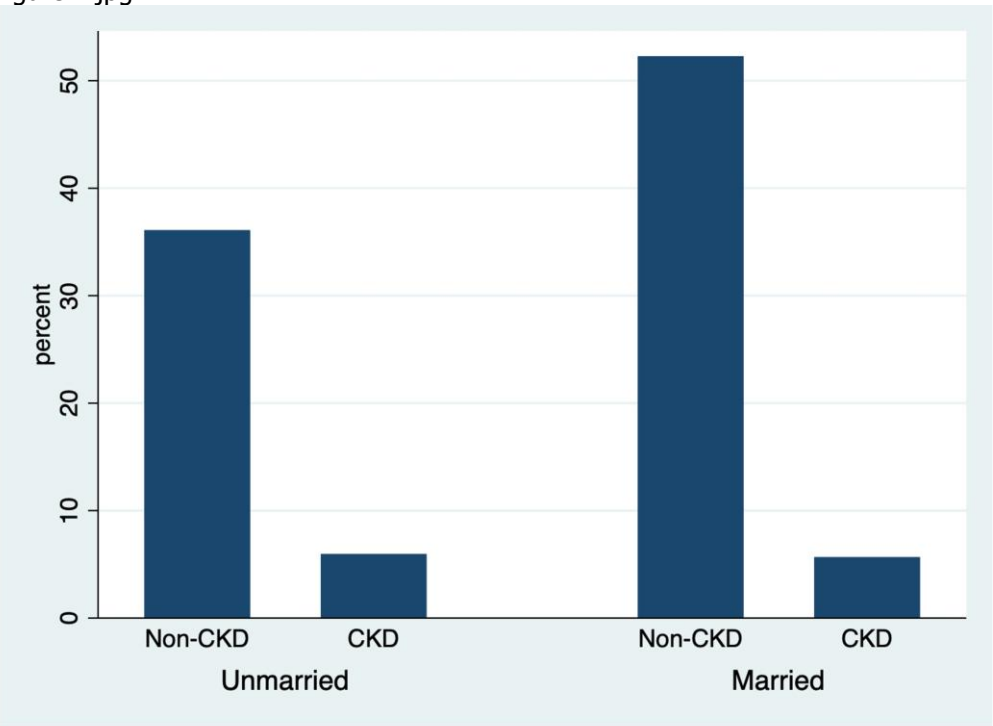

Figure 1: Distribution of study participants categorized by marital status and chronic kidney disease. *CKD, chronic kidney disease*

Figure 1.jpg

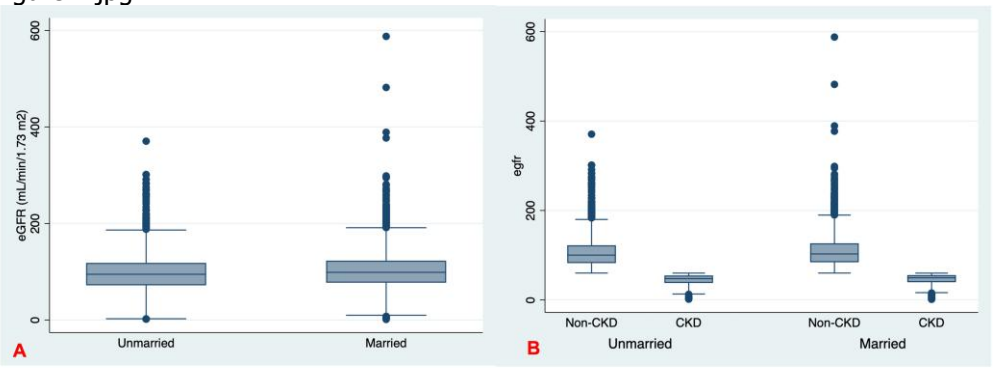

Figure 2: HFigure 2: Box plot demonstrating estimated glomerular filtration rate of participants with married and unmarried status (A) as well as stratified by chronic kidney disease (B)
CKD,. Chronic kidney disease