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National trends in the prevalence of chronic kidney disease in Korea, 2007-2020, including the COVID-19 pandemic

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Objectives: Little is known about the prevalence of chronic kidney disease (CKD) during the coronavirus disease 2019 (COVID-19) pandemic, as well as the pandemics' impact on CKD diagnosis. We aimed to investigate the long-term trends in CKD prevalence throughout the pre- and early pandemic periods in adults using a nationwide serial survey from South Korea.

Methods: We used data from 108,152 Korean adults from 2007 to 2020 obtained from a representative longitudinal serial study. We defined CKD as a condition when the participant's estimated glomerular filtration rate was <60 mL/min/1.73 m^2, one-time spot proteinuria was ≥1+ on a urinary dipstick test according to recent guidelines, or previous diagnosis of CKD. We examined the overall trends in the prevalence of CKD during the study period and the impact of the early pandemic on the prevalence of CKD.

Results: Among the included adults (n=80,010), the overall national prevalence of CKD was 6.2%. The trend slope gradually increased from 2007 to 2019, however, there was a sudden decrease in 2020 (2007–2010, 5.1% [95% confidence interval (CI), 4.7–5.5]; 2017–2019, 7.1% [95% CI, 6.6–7.6]; pandemic period, 6.5% [95% CI, 5.7–7.3]; and β_{diff}, -0.19; 95% CI, -0.24–-0.13). The prevalence of CKD among younger adults and those with poor medical utilization significantly decreased during the early pandemic.

Conclusions: This study was the first large-scale study to investigate the longitudinal prevalence of CKD from 2007 to 2020. Our findings suggest that underestimation of CKD occurred during the early phase of the pandemic. Appropriate medical policies need to be implemented during pandemic times to avoid under-detection of CKD.