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Chronic Kidney Disease, Oral Health Problems, and Risk Factors: A District-Level Analysis in Six Provinces of Java

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Objectives : Chronic Kidney Disease (CKD) has been linked to poor oral health outcomes, which may be exacerbated by smoking and high-risk dietary consumption. Despite these associations, accessibility to dental care services for patients with kidney disease remains challenging. This study aims to analyze the relationship between CKD prevalence, oral health problems, and associated risk factors using district-level data from six provinces in Java, Indonesia.

Methods : This ecological study utilized district-level data from Basic Health Research (RISKESDAS) 2018. Variables included the prevalence of CKD, oral health problems (dental caries, periodontitis), smoking prevalence, and high-risk dietary consumption (high sodium, sugary, and instant foods). Accessibility to dental care was measured by the number of dental health professionals per 100,000 population and perceived ease of access to dental care. Regression analysis was conducted to assess the associations between CKD, oral health problems, and risk factors with a significance level of $p < 0.05$.

Results : The analysis revealed that districts with higher CKD prevalence also exhibited a more significant burden of oral health problems ($p < 0.01$). Higher smoking prevalence and increased consumption of high-risk foods were associated with a higher prevalence of CKD. Furthermore, lower accessibility to dental care, indicated by both a lower number of dental professionals and poorer perceived ease of access, was correlated with a higher prevalence of both CKD and increased oral health problems, which were linked to higher diagnoses by professionals, highlighting gaps in healthcare services.

Conclusions : This study highlights a strong relationship between CKD, oral health problems, and modifiable risk factors at the district level in Java. Strengthening public health interventions focused on smoking cessation, dietary improvements, and equitable access to oral healthcare could help reduce the burden of both CKD and oral diseases.