



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Life's Essential 8 Defined Cardiovascular Health and Chronic Kidney Disease in the Korean Population

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Objectives : Life's Essential 8 (LE8), recently introduced by the American Heart Association, is an integrated measure of cardiovascular health (CVH). Cardiovascular disease and chronic kidney disease (CKD) share multiple modifiable risk factors and pathophysiological pathways, suggesting that overall cardiovascular health may be relevant to kidney health. We investigated the association between LE8-defined CVH and CKD prevalence in the Korean population.

Methods : This cross-sectional study used data from the Korea National Health and Nutrition Examination Survey (KNHANES) from 2019–2021. The LE8 score comprises eight metrics—diet, physical activity, nicotine exposure, sleep health, body mass index, blood lipids, blood glucose, and blood pressure—and was categorized as low (0–49), moderate (50–79), or high (80–100). CKD was defined as an estimated glomerular filtration rate <60 mL/min/1.73 m² or urine albumin-to-creatinine ratio ≥ 30 mg/g. Multivariable logistic regression was used to estimate odds ratios (ORs) for CKD prevalence.

Results : CKD prevalence decreased across higher CVH categories, showing a graded relationship. Compared with the low CVH group, the adjusted ORs for CKD were significantly lower in the moderate and high CVH groups. This inverse association remained robust after multivariable adjustment. When LE8 components were examined separately, both health behaviors and health factors were associated with CKD, although the association was stronger for health factors. In analyses stratified by glycemic status, CKD prevalence increased from normal glucose status to prediabetes and diabetes within each CVH category; however, the inverse relationship between CVH and CKD prevalence was consistently observed regardless of glycemic status.

Conclusions : Higher LE8-defined cardiovascular health was associated with lower CKD prevalence in a graded manner in the Korean population. These findings underscore the importance of cardiovascular health management as a potential strategy for improving kidney health.

age_adjusted_ckd_prevalence.JPG



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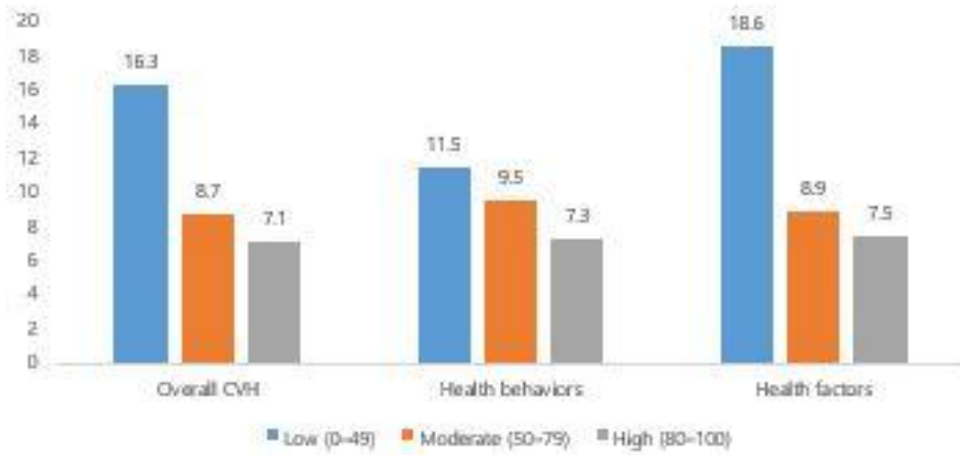
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	Univariable model		Multivariable model 1		Multivariable model 2	
	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
LE8 score		<.0001		<.0001		<.0001
Low (0-49)	1 (ref.)		1 (ref.)		1 (ref.)	
Moderate (50-79)	0.409 (0.355, 0.472)		0.407 (0.350, 0.473)		0.425 (0.365, 0.495)	
High (80-100)	0.119 (0.077, 0.183)		0.206 (0.133, 0.319)		0.229 (0.148, 0.356)	
Health behaviors score		<.0001		<.0001		0.0008
Low (0-49)	1 (ref.)		1 (ref.)		1 (ref.)	
Moderate (50-79)	0.818 (0.713, 0.939)		0.758 (0.656, 0.877)		0.803 (0.692, 0.932)	
High (80-100)	0.559 (0.430, 0.727)		0.556 (0.428, 0.723)		0.640 (0.489, 0.836)	
Health factors score		<.0001		<.0001		<.0001
Low (0-49)	1 (ref.)		1 (ref.)		1 (ref.)	
Moderate (50-79)	0.400 (0.340, 0.470)		0.405 (0.342, 0.480)		0.409 (0.345, 0.485)	
High (80-100)	0.128 (0.101, 0.162)		0.241 (0.189, 0.309)		0.243 (0.190, 0.312)	