

Supplementary Materials

Housing Insecurity and Risk of Adverse Kidney Outcomes

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Supplemental Table S1. Comparison of Available Housing Variables. The variable, “Are you able to afford a suitable home for you and your family?” was chosen as the definition of housing insecurity in this study due to completeness of data. All values in the table are reported as N (%).

HANDLS variable	Are you able to afford a suitable home for you and your family? (N = 1262)		P-value
	Yes (N = 857)	No (N = 405)	
Difficulty paying rent or mortgage (N = 653)	133 (28.4)	92 (49.7)	<0.001
Able to afford home repairs (N = 1261)	589 (68.8)	70 (17.3)	<0.001
Rent or own home (N = 1154)			<0.001
Own	423 (54.2)	60 (15.8)	
Rent	281 (36.0)	170 (45.5)	
Other	76 (9.7)	145 (38.8)	
Status of mortgage (N = 1243)			<0.001
Not applicable	466 (55.3)	345 (86.0)	
Foreclosure	33 (3.9)	15 (3.7)	
Good standing	337 (40.0)	38 (9.5)	
Notice of foreclosure	6 (0.7)	3 (0.7)	
Live with relatives (N = 1181)			0.033
No	672 (84.1)	301 (78.8)	
Sometimes	42 (5.3)	20 (5.2)	
Always	85 (10.6)	61 (16.0)	
Live with friends (N = 1182)			0.038
No	770 (96.3)	355 (92.9)	
Sometimes	6 (0.8)	7 (1.8)	
Always	24 (3.0)	21 (5.2)	

Supplement Table S2. Association between housing insecurity and incident eGFR<60 stratified by baseline eGFR>90 and eGFR 60-90 ml/min/1.73m².

	eGFR >90	eGFR 60-90	P interaction
Analysis	Odds ratio (95% CI)		
Model 1	0.18 (0.02 – 1.57)	1.00 (0.45 – 2.22)	<0.001
Model 2	0.17 (0.02 – 1.48)	1.13 (0.47 – 2.71)	<0.001
Model 3	0.20 (0.02 – 1.52)	1.12 (0.52 – 2.45)	0.001
Model 4	0.23 (0.03 – 1.63)	0.90 (0.36 – 2.25)	<0.001

Model 1 – unadjusted.

Model 2 – adjusted for demographics (age, sex at birth and poverty status).

Model 3 – adjusted for demographics and clinical variables (eGFR, ACR, systolic blood pressure and diabetes status).

Model 4 – adjusted for demographics, clinical variables, and financial strain (unemployment, food insecurity, and ability to afford medical care).

Abbreviations: eGFR – estimated glomerular filtration rate; albumin-to-creatinine ratio – ACR; CI – confidence interval.

Supplement Table S3. Association between housing insecurity and incident albuminuria stratified by race.

	Blacks	Whites	P interaction
Analysis	Odds ratio (95% CI)		
Model 1	1.40 (0.70 – 2.81)	3.81 (2.08 – 7.01)	0.099
Model 2	1.47 (0.69 – 3.17)	3.15 (1.86 – 5.34)	0.091
Model 3	1.32 (0.50 – 3.52)	2.58 (1.54 – 4.30)	0.108
Model 4	1.27 (0.53 – 3.07)	1.95 (0.94 – 4.05)	0.107

Model 1 – unadjusted.

Model 2 – adjusted for demographics (age, sex at birth and poverty status).

Model 3 – adjusted for demographics and clinical variables (eGFR, ACR, systolic blood pressure and diabetes status).

Model 4 – adjusted for demographics, clinical variables, and financial strain (unemployment, food insecurity, and ability to afford medical care).

Abbreviations: Abbreviations: eGFR – estimated glomerular filtration rate; albumin-to-creatinine ratio – ACR; CI – confidence interval.

Supplement Table S4. Risk of composite outcomes associated with housing insecurity (death or rapid kidney function decline, death or reduced kidney function, and death or albuminuria).

Analysis	Regression Estimate	
	IRR	95% CI
Death or Rapid eGFR Decline (N = 1297; 226 events)		
Model 1	1.38	1.08 – 1.75
Model 2	1.40	1.10 – 1.79
Model 3	1.31	1.03 – 1.68
Model 4	1.20	0.91 – 1.57
Death or eGFR <60 ml/min/1.73m² (N = 1485; 132 events)	OR	95% CI
Model 1	1.05	0.67 – 1.65
Model 2	1.24	0.77 – 2.00
Model 3	1.14	0.69 – 1.89
Model 4	0.95	0.55 – 1.67
Death or ACR ≥30 mg/g (N = 1371; 479 events)	OR	95% CI
Model 1	1.28	0.99 – 1.66
Model 2	1.30	0.99 – 1.27
Model 3	1.26	0.96 – 1.66
Model 4	1.26	0.93 – 1.70

Model 1 – unadjusted.

Model 2 - adjusted for demographics (age, sex at birth, black/white race, and poverty status).

Model 3 – adjusted for demographics and clinical variables (eGFR, ACR, systolic blood pressure and diabetes status).

Model 4 – adjusted for demographics, clinical variables, and financial strain variables (unemployment, food insecurity, and ability to afford medical care).

Abbreviations: Abbreviations: eGFR – estimated glomerular filtration rate; albumin-to-creatinine ratio – ACR; CI – confidence interval; IRR – incidence rate ratio; OR – odds ratio.

Supplement Table S5. Risk of outcomes using composite definition of housing insecurity. Housing insecurity was defined as report of inability to afford a suitable home or difficulty paying rent or mortgage payments.

Analysis	Regression Estimate	
	IRR	95% CI
Rapid eGFR Decline (N = 873; 149 events)		
Model 1	1.23	0.93 – 1.63
Model 2	1.23	0.94 – 1.61
Model 3	1.21	0.94 – 1.55
Model 4	1.21	0.86 – 1.69
eGFR <60 ml/min/1.73m² (N = 847; 38 events)	OR	95% CI
Model 1	0.76	0.40 – 1.43
Model 2	1.34	0.69 – 2.62
Model 3	1.31	0.50 – 3.39
Model 4	0.80	0.25 – 2.59
ACR ≥30 mg/g (N = 771; 50 events)	OR	95% CI
Model 1	2.12	1.21 – 3.72
Model 2	1.95	1.21 – 3.14
Model 3	2.12	1.11 – 4.04
Model 4	1.41	0.60 – 3.30

Model 1 – unadjusted.

Model 2 - adjusted for demographics (age, sex at birth, black/white race, and poverty status).

Model 3 – adjusted for demographics and clinical variables (eGFR, ACR, systolic blood pressure and diabetes status).

Model 4 – adjusted for demographics, clinical variables, and financial strain variables (unemployment, food insecurity, and ability to afford medical care).

Abbreviations: Abbreviations: eGFR – estimated glomerular filtration rate; albumin-to-creatinine ratio – ACR; CI – confidence interval; IRR – incidence rate ratio; OR – odds ratio.

Supplement Table S6. Risk of 3% decline in eGFR between waves 3 and 4.

Analysis	Regression Estimate	
	IRR	95% CI
3% eGFR Decline (N = 1262; 845 events)		
Model 1	0.95	0.88 – 1.02
Model 2	0.96	0.89 – 1.04
Model 3	0.96	0.91 – 1.03
Model 4	1.01	0.93 – 1.09

Model 1 – unadjusted.

Model 2 - adjusted for demographics (age, sex at birth, black/white race, and poverty status).

Model 3 – adjusted for demographics and clinical variables (eGFR, ACR, systolic blood pressure and diabetes status).

Model 4 – adjusted for demographics, clinical variables, and financial strain variables (food insecurity, and ability to afford medical care).

Abbreviations: eGFR – estimated glomerular filtration rate; albumin-to-creatinine ratio – ACR; CI – confidence interval; IRR – incidence rate ratio; OR – odds ratio.

Supplement Table S7. Risk of outcomes associated with housing insecurity among individuals with incident unemployment at baseline (wave three). The study population was restricted to individuals who reported new unemployment at wave three (and were employed at wave one).

Analysis	Regression Estimate	
	IRR	95% CI
Rapid eGFR Decline (N = 227; 43 events)		
Model 1	2.34	1.52 – 3.59
Model 2	2.30	1.60 – 3.30
Model 3	2.05	1.48 – 2.85
Model 4	2.44	1.64 – 3.64
eGFR <60 ml/min/1.73m² (N = 220; 11 events)	OR	95% CI
Model 1	0.76	0.22 – 2.61
Model 2	1.52	0.39 – 5.91
Model 3	1.47	0.16 – 13.23
Model 4	1.44	0.09 – 23.35
ACR ≥30 mg/g (N = 190; 18 events)	OR	95% CI
Model 1	4.28	1.43 – 12.83
Model 2	7.06	2.17 – 22.92
Model 3	8.78	1.96 – 39.43
Model 4	22.16	4.78 – 102.75

Model 1 – unadjusted.

Model 2 - adjusted for demographics (age, sex at birth, black/white race, and poverty status).

Model 3 – adjusted for demographics and clinical variables (eGFR, ACR, systolic blood pressure and diabetes status).

Model 4 – adjusted for demographics, clinical variables, and financial strain variables (food insecurity, and ability to afford medical care).

Abbreviations: eGFR – estimated glomerular filtration rate; albumin-to-creatinine ratio – ACR; CI – confidence interval; IRR – incidence rate ratio; OR – odds ratio.