Socioeconomic measures and chronic kidney disease in the Unites States and the Netherlands

On-line material

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Supplementary Table 1: Association of income quintiles and education levels with CKD among different race in NHANES*

	Income quintiles					
	1* (Highest)	2	3	4	5 (Lowest)	
Race	Reference	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]	P-trend
Non-Hispanic white (n=3,464)	1	1.29 (0.90 – 1.86)	1.71 (1.17 – 2.48)	2.10 (1.39 – 3.16)	2.62 (1.66 – 4.15)	<0.001
Non-Hispanic black (n=1,504)	1	1.08 (0.76 – 1.79)	1.39 (0.78 – 2.48)	1.67 (1.03 – 2.55)	1.80 (1.06 – 3.06)	<0.001
Mexican American (n=1,773)	1	0.96 (0.40 – 2.29)	1.08 (0.50 – 2.32)	1.37 (0.64 – 2.92)	1.54 (0.72 – 3.28)	0.047
	Educational levels					
	1* (Highest)	2	3	4	5 (Lowest)	
Race	Reference	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]	p-trend
Non-Hispanic white (n=3,464)	1	1.42 (1.00 – 2.03)	1.10 (0.76 – 1.59)	1.47 (0.96 – 2.25)	1.46 (0.81 – 2.61)	0.20
Non-Hispanic black (n=1,504)	1	1.16 (0.66 – 2.03)	1.20 (0.62 – 2.33)	1.79 (1.05 – 3.06)	1.40 (0.78 – 2.48)	0.03
Mexican American (n=1,773)	1	0.94 (0.38 – 2.29)	0.97 (0.40 – 2.36)	1.48 (0.59 – 3.70)	1.22 (0.50 – 2.98)	0.85

*Shown are odds ratio of CKD for income and educational levels in logistic regression model
*Adjusted for age, gender and education (for income analysis)/income (for education analysis)

Supplementary Table 2: Association of income quintiles and education levels with CKD in NHANES and PREVEND for participants aged < 65 years*

Study		Income quintiles and educational levels					
		1	**2**	**3**	**4**	**5**	
		(Highest)				**(Lowest)**	
Study		Reference	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]	p - trend
NHANES (N=5,902)	**Income**	1	1.08 (0.75 – 1.57)	1.54 (0.99 – 2.08)	2.09 (1.41 – 2.79)	2.71 (1.85 – 3.97)	<0.001
	Education	1	1.22 (0.77 – 1.97)	1.37 (0.96 – 1.96)	1.81 (1.24 – 2.63)	1.52 (1.07 – 2.14)	0.047
PREVEND (N=4,597)	**Income**	1	0.88 (0.66 – 1.18)	1.12 (0.84 – 1.50)	0.95 (0.70 – 1.30)	1.14 (0.83 – 1.50)	0.31
	Education	1	0.90 (0.64 – 1.26)	1.17 (0.85 – 1.61)	1.43 (1.03 – 1.99)	1.76 (1.21– 2.55)	<0.001

*Shown are odds ratio of CKD for income and educational levels in logistic regression models
*Adjusted for age, gender, race and education (for income analysis) and income (for education analysis)

Supplementary Table 3: Association of income quintiles and education levels with CKD in NHANES after adjusting for other covariates along with age, gender, race *

Model		1 (Highest) Reference	2 OR [95% CI]	3 OR [95% CI]	4 OR [95% CI]	5 (Lowest) OR [95% CI]	p - trend
		Income quintiles and education levels					
1	**Income**	1	1.10 (0.81 - 1.50)	1.49 (1.10 – 2.01)	1.82 (1.33 – 2.50)	2.34 (1.68 - 3.27)	<0.001
	Education	1	1.19(0.88 – 1.60)	1.43 (0.89 – 2.27)	1.74 (1.27 – 2.38)	1.62 (0.87 – 2.25)	0.05
2	**Income**	1	1.01 (0.74 - 1.39)	1.36 (1.00 - 1.86)	1.52 (1.09 - 2.11)	1.96 (1.38 - 2.77)	<0.001
	Education	1	1.19 (0.80 - 1.40)	1.02 (0.75 - 1.39)	1.34 (0.96 - 1.88)	1.08 (0.73 - 1.60)	0.19

*Model 1= Adjusted for age, gender, race and income/education

*Model 2=Model 1 + smoking, diabetes, blood pressure, body mass index and cardiovascular disease

Supplementary Table 4: Association of income quintiles and education levels with CKD in PREVEND after adjusting for other covariates along with age, gender, race*

Models		1 (Highest) Reference	2 OR [95% CI]	3 OR [95% CI]	4 OR [95% CI]	5 (Lowest) OR [95% CI]	p - trend
		Income quintiles and education levels					
1	Income	1	0.88 (0.69 – 1.13)	1.08 (0.84 – 1.38)	0.97 (0.74 – 1.26)	1.12 (0.85 – 1.42)	0.30
	Education	1	0.98 (0.72 – 1.33)	1.26 (0.94 – 1.69)	1.47(1.05 – 2.03)	1.50(1.12 – 2.02)	<0.001
2	Income	1	0.71 (0.44 – 1.14)	0.98 (0.62 – 1.54)	1.04 (0.66 – 1.65)	0.91 (0.56 – 1.50)	0.83
	Education	1	1.01 (0.66 – 1.56)	1.07 (0.72 – 1.59)	1.14 (0.77 – 1.69)	1.18 (0.80 – 1.74)	0.07

*Model 1= Adjusted for age, gender, race and income/education

*Model 2=Model 1 + smoking, diabetes, blood pressure, body mass index, cardiovascular disease

Supplementary Table 5: Association of income quintiles and education levels with GFR < 60 mL/min/1.73 m2 in NHANES and PREVEND*

		Income quintiles and education levels					
		1	**2**	**3**	**4**	**5**	
		(Highest)				**(Lowest)**	
Outcomes		Reference	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]	p - trend
NHANES	**Income**	1	0.98 (0.40 – 1.42)	1.14 (0.85 – 1.39)	1.76 (1.23 – 2.29)	1.99 (1.54 - 2.34)	<0.001
	Education	1	0.88 (0.35 – 2.23)	1.01 (0.45 – 2.27)	1.28 (0.60 – 2.73)	1.43 (0.65 – 3.20)	0.93
PREVEND	**Income**	1	0.84 (0.54 – 1.31)	0.88 (0.56 – 1.38)	1.11 (0.73 – 1.70)	1.13 (0.73 – 1.72)	0.12
	Education	1	0.86 (0.57 – 1.29)	0.97 (0.61 – 1.32)	1.15 (0.84 – 1.49)	1.27 (1.01 – 1.61)	0.04

*Adjusted for age, gender, race and education/income

Supplementary Table 6: Association of income quintiles and education levels with ACR ≥ 30 mg/g in NHANES and PREVEND*

Outcomes		Income quintiles and education levels					
		1 (Highest) Reference	**2** OR [95% CI]	**3** OR [95% CI]	**4** OR [95% CI]	**5** (Lowest) OR [95% CI]	p - trend
NHANES	**Income**	1	1.16 (0.82 - 1.64)	1.58 (1.13 - 2.21)	2.07 (1.47 - 2.92)	2.68 (1.87 - 3.84)	<0.001
	Education	1	1.37 (0.99 - 1.88)	1.13 (0.81 - 1.57)	1.63 (1.17 – 2.29)	1.18 (0.79 - 1.74)	0.45
PREVEND	**Income**	1	0.89 (0.68 - 1.17)	1.17 (0.90 -1.52)	1.02 (0.77 - 1.34)	1.30 (0.99 - 1.70)	0.024
	Education	1	0.98 (0.71 – 1.34)	1.19 (0.88 - 1.60)	1.37 (1.01 - 1.87)	1.48 (1.05 - 2.09)	0.001

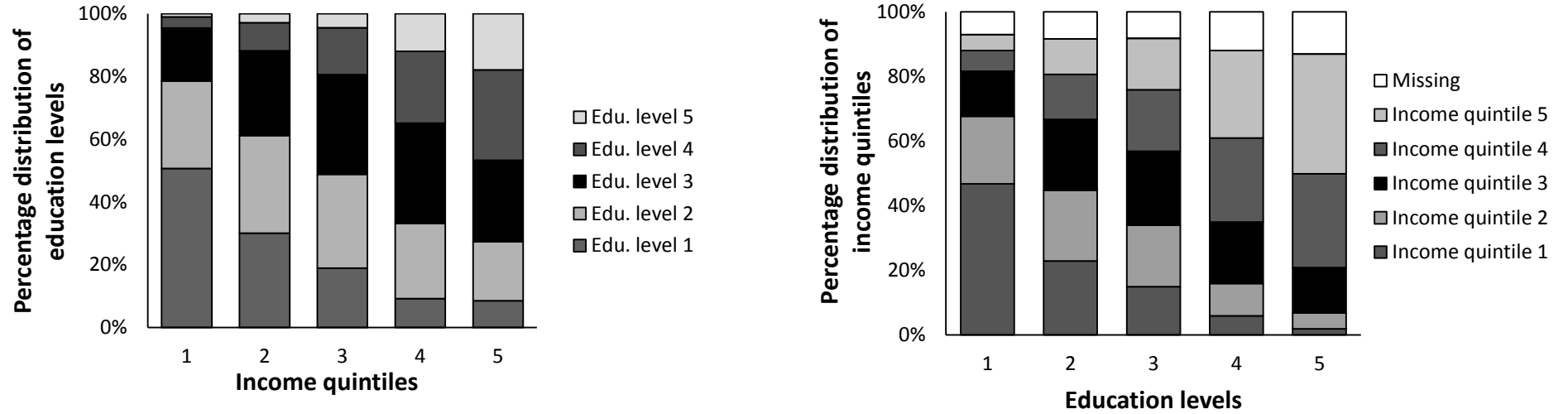*Adjusted for age, gender, race and income/education

Supplementary Figures

Supplemental Figure 1: The percentage distribution of education levels in each income quintile (left panel) and income quintiles in each education level (right panel) in NHANES*

Supplemental Figure 2: The percentage distribution of education levels in each income quintile (left panel) and income quintiles in each education level (right panel) in PREVEND*

Supplemental Figure 3: Association of absolute income levels with CKD in NHANES and PREVEND*

Supplemental Figure 1: The percentage distribution of education levels in each income quintile (left panel) and income quintiles in each education level (right panel) in NHANES*

*NHANES= National Health and Nutritional Examination Survey
*Income quintile 1 and education level 1 are highest and income quintile 5 and education level 5 are lowest level of income and education, respectively.

Supplemental Figure 2: The percentage distribution of education levels in each income quintile (left panel) and income quintiles in each education level (right panel) in PREVEND*
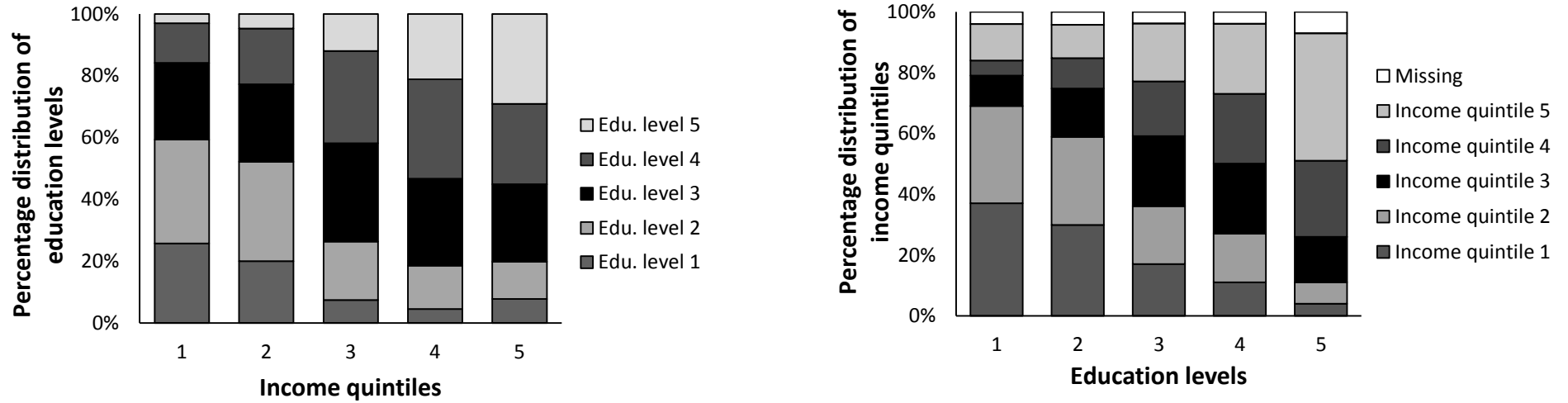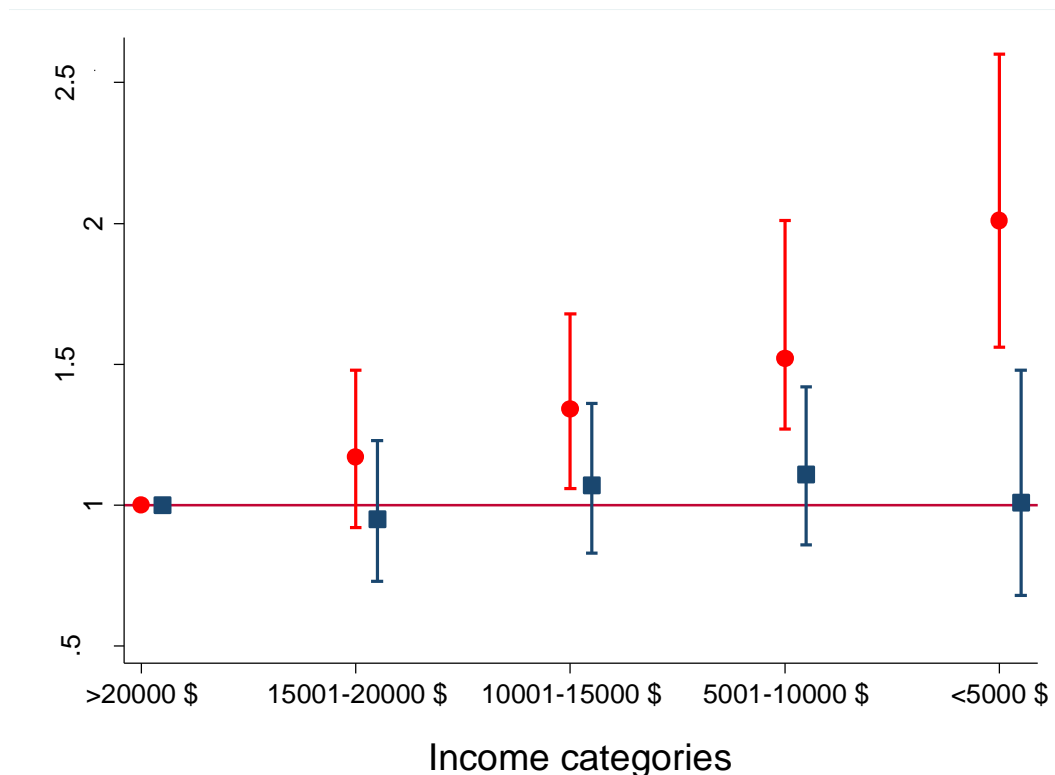

*PREVEND= Prevention of Renal and Vascular End-stage Disease
*Income quintile 1 and education level 1 are highest and income quintile 5 and education level 5 are lowest level of income and education, respectively.

Supplemental Figure 3: Association of absolute income levels with CKD in NHANES and PREVEND*.

Presented are adjusted odds ratio (adjusted for age, sex, race and education) for the association of CKD with absolute income levels (annual household income per household member in dollars) in NHANES (lines and circles) and PREVEND (lines and squares)). The percentage of the participants in each income category in NHANES and PREVEND were, respectively, 36 vs. 15 in > 20000 $, 16 vs. 19 in 15001-20000 $, 16 vs. 29 in 10001-15000 $, 19 vs. 30 in 5001-10000 $ and 13 vs. 7 in ≤ 5000 $.

*NHANES= National Health and Nutritional Examination Survey & *PREVEND= Prevention of Renal and Vascular End-stage Disease