Supplemental Data

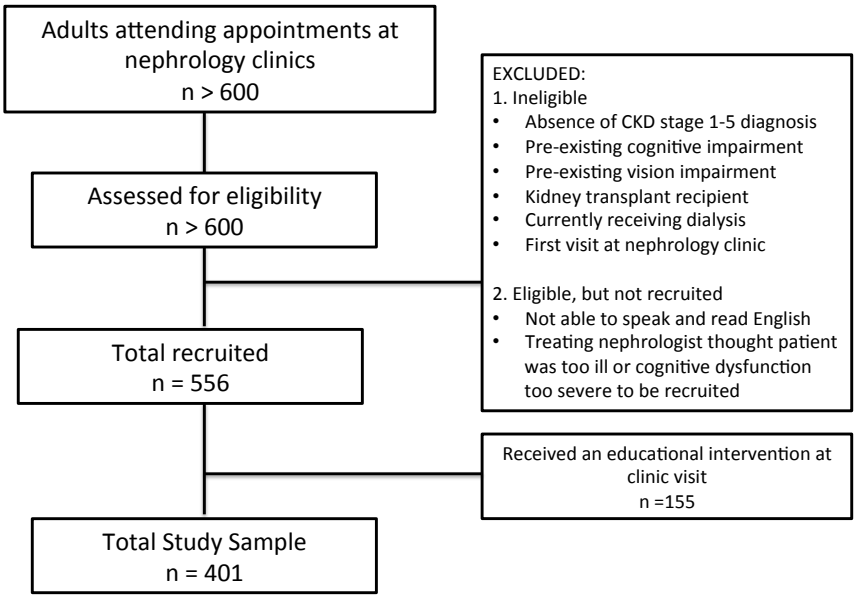

Figure S1: Flow Diagram of study recruitment.

Table S1: Self-Care behavior scores for individual behaviors and summary measures of study participants (N=401).	
Individual Self-Care Behavior Scores*	Median (IQR) Scores
General 'Healthful' Diet	5 (4-6)
Fruit/Vegetable Diet	4 (2-5)
Avoid High Fat Diet	4 (3-5)
'All' Diet[1]	4.3 (3.3-5)
Exercise	2.5 (1-4)
Non-Smoking	7 (7-7)
Medication adherence	7 (4.7-7)
Avoid nephrotoxins	7 (3.5-7)
Blood glucose testing[2]	7 (3.5-7)
Foot care[2]	7 (4-7)
Summary Self-Care Scores*	Median (IQR) Scores
General CKD Self-Care[a], (range 0-35**)**	25.5 (22.5-27.7)
Diabetes-related CKD Self-Care[2,b], (range 0-49)	41.8 (31-46.8)

*days reported in the previous seven days

[1]Mean of the three dietary behavior scores

[2]Sample of those with diabetes (N=145)

[a] Summation of five behavior scores: "all" diet, exercise, non-smoking, medication adherence, and avoiding nephrotoxins

[b] Summation of (a) + foot care + blood glucose testing behavior scores

Table S2: Association of PiKS and KiKS scores with self-care summary scores, by health literacy level.				
	Inadequate Health Literacy		**Adequate Health Literacy**	
General CKD Self-Care Summary Score[1]	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**
KiKS Score (per SD)	4.84 (-3.32-13.0)	0.24	-1.52 (-4.98-1.95)	0.39
PiKS Score (per SD)	2.35 (0.41-4.29)	0.02	0.79 (-0.09-1.67)	0.08
Diabetes-related CKD Self-Care[2]	**β**	**p-value**	**β**	**p-value**
KiKS Score (per SD)	39.29 (19.08 – 59.50)	0.001	-5.02 (-17.97-7.94)	0.44
PiKS Score (per SD)	0.01 (-4.03-4.06)	0.99	1.08 (-1.98-4.14)	0.49
KiKS – Kidney Disease Knowledge Survey; PiKS – Perceived Kidney Disease Knowledge Survey; CKD – Chronic Kidney Disease [1]: Inadequate health literacy (N=65); Adequate health literacy (N=315) [2]: Inadequate health literacy (N=24); Adequate health literacy (N=114) Model adjusted for sex, race, age, education level, income category, eGFR, diabetes status, health literacy, PiKS score, KiKS score				

Table S3. Association of health literacy, and objective kidney disease knowledge and perceived kidney disease knowledge with CKD self-care by CKD stage.

	CKD Stage 1-2		CKD Stage 3		CKD Stage 4-5	
General CKD Self-Care[1]	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**
Adequate vs. Inadequate Health Literacy	-2.22 (-6.72, 2.28)	0.33	0.12 (-1.88, 2.12)	0.91	-0.06 (-2.92, 2.80)	0.97
Objective Kidney Disease Knowledge^	-0.87 (-2.67, 0.93)	0.34	0.28 (-0.49, 1.06)	0.47	0.15 (-1.00, 1.31)	0.79
Perceived Kidney Disease Knowledge*	2.03 (0.27-3.78)	0.03	1.22 (0.44-1.99)	<0.01	0.91 (-0.17-1.98)	0.10
Diabetes-related CKD Self-Care[2]						
Adequate vs. Inadequate Health Literacy	---		-6.33 (-14.31, 1.64)	0.12	4.63 (-6.52, 15.78)	0.40
Objective Kidney Disease Knowledge^	---		2.08 (-0.95, 5.11)	0.17	1.32 (-3.12, 5.75)	0.54
Perceived Kidney Disease Knowledge*	---		0.79 (-2.41, 3.98)	0.62	-0.83 (-5.03-3.37)	0.68

^determined by Kidney Disease Knowledge Survey score (per standard deviation); *determined by Perceived Kidney Disease Knowledge Survey score (per standard deviation); CKD – Chronic Kidney Disease

Model adjusted for sex, race, age, education, income, eGFR, urine protein:creatinine, diabetes status, hypertension status, BMI, awareness of CKD diagnosis, number of times in one year evaluated by nephrologist + health literacy, PiKS score, KiKS score (N=275; DM = 112)

[1]CKD stage 1-2 N=65, CKD Stage 3 N= 131, CKD stage 4-5 N=79

[2] CKD stage 1-2 N=13, CKD Stage 3 N=61, CKD stage 4-5 N=38

Table S4: Association of health literacy, and objective kidney disease knowledge and perceived kidney disease knowledge with CKD self-care by race (white vs. non-white) and by annual income (≤$55,000 vs. >$55,000).

	White		Non-White		
General CKD Self-Care[1]	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**	**p-value interaction**
Adequate vs. Inadequate Health Literacy	0.04 (-1.52, 1.60)	0.96	-6.26 (-11.21, -1.21)	0.02	<0.001
Objective Kidney Disease Knowledge^	0.16 (-0.42, 0.74)	0.59	0.07 (-1.57, 1.71)	0.93	
Perceived Kidney Disease Knowledge*	0.74 (0.14-1.33)	0.02	3.16 (1.23-5.09)	0.002	
Diabetes-related CKD Self-Care[2]					
Adequate Health Literacy	-1.01 (-7.48, 5.46)	0.76	-8.07 (-46.98, 30.87)	0.56	<0.001
Objective Kidney Disease Knowledge^	1.04 (-1.37, 3.45)	0.39	1.59 (-9.65-12.82)	0.68	
Perceived Kidney Disease Knowledge*	0.26 (-1.98, 2.50)	0.82	5.44 (-7.57, 18.45)	0.28	
	>$55,000 per year		**≤$55,000 per year**		
General CKD Self-Care[3]	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**	**p-value interaction**
Adequate vs. Inadequate Health Literacy	-0.38 (-2.55, 1.79)	0.73	-0.34 (2.35, 1.68)	0.74	<0.001
Objective Kidney Disease Knowledge^	0.32 (-0.53, 1.17)	0.46	-0.14 (-0.93, 0.65)	0.73	
Perceived Kidney Disease Knowledge*	1.16 (0.29, 2.03)	0.01	1.03 (0.22, 1.83)	0.01	
Diabetes-related CKD Self-Care[4]					
Adequate vs. Inadequate Health Literacy	-2.38 (-10.49, 5.73)	0.56	5.16 (-3.08, 13.41)	0.21	<0.001
Objective Kidney Disease Knowledge^	1.33 (-2.02, 4.69)	0.42	0.86 (-1.78, 3.49)	0.52	
Perceived Kidney Disease Knowledge*	-2.35 (-5.77, 1.06)	0.17	2.99 (0.30, 5.67)	0.03	

^determined by Kidney Disease Knowledge Survey score (per standard deviation); *determined by Perceived Kidney Disease Knowledge Survey score (per standard deviation); CKD – Chronic Kidney Disease

Models adjusted for sex, race, age, education, income, eGFR, urine protein:creatinine, diabetes status, hypertension status, BMI, awareness of CKD diagnosis, number of times in one year evaluated by nephrologist + health literacy, PiKS score, KiKS score

[1]White, N=227; Non-White, N=48; [2] White, N=92, Non-White, N=20

[3]≤$55,000/year, N=142, >$55,000, N=133; [4] ≤$55,000/year, N=61, >$55,000, N =51

Table S5. Association of summary self-care scores including seven individual self-care behaviors and health literacy, objective and perceived knowledge scores.

	Model 1		Model 2		Model 3	
General CKD Self-Care-7[1]	**β**	**p-value**	**β**	**p-value**	**β**	**p-value**
Adequate vs. Inadequate health literacy	1.67 (0.10-3.24)	0.04	1.08 (-0.62-2.78)	0.21	0.89 (-0.82-2.60)	0.31
KiKS score	0.31 (-0.19-0.91)	0.32	0.13 (-0.50-0.76)	0.69	-0.20 (-0.85-0.46)	0.56
PiKS score	1.10 (0.50-1.69)	<0.001	0.99 (0.33-1.64)	0.003	1.01 (0.33-1.69)	0.004
Diabetes-related CKD Self-Care[2]	**β**	**p-value**	**β**	**p-value**	**β**	**p-value**
Adequate vs. Inadequate health literacy	2.72 (-1.67-7.11)	0.22	2.88 (-1.83-7.59)	0.23	2.40 (-2.47-7.26)	0.33
KiKS score	1.01 (-0.66-2.68)	0.23	0.81 (-1.01-2.63)	0.38	0.46 (-1.45-2.36)	0.64
PiKS score	1.64 (0.01-3.27)	<0.05	0.87 (-0.92-2.65)	0.34	0.65 (-1.19-2.49)	0.49

KiKS – Kidney Disease Knowledge Survey; PiKS – Perceived Kidney Disease Knowledge Survey; CKD – Chronic Kidney Disease

Model 1: unadjusted

Model 2: adjusted for sex, race, age, education level, income category, eGFR, diabetes status

Model 3: Model 2 + health literacy, PiKS score, KiKS score

[1]-N=401 Model 1, N=380 for Models 2-3

[2]-N=145 Model 1, N=138 for Models 2-3

Table S6. Association of health literacy, and objective kidney disease knowledge and perceived kidney disease knowledge with CKD self-care individual behaviors (N=275).

	Adequate vs. Inadequate Health Literacy Level		KiKS score		PiKS score	
Individual Behavior Scores	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**	**β (95% CI)**	**p-value**
Diet mean score	0.09 (-0.34, 0.52)	0.68	0.01 (-0.16, 0.18)	0.89	0.17 (-0.01, 0.34)	0.06
Mean Exercise Score	-0.73 (-1.44, -0.02)	0.04	0.07 (-0.21, 0.35)	0.63	0.26 (-0.03, 0.55)	0.07
Non-smoking score	0.06 (-0.62, 0.74)	0.86	0.12 (-1.15, 0.38)	0.38	0.38 (0.10, 0.65)	0.01
Medication Adherence Score	0.49 (0.001-0.90)	<0.05	0.003 (-0.17, 0.18)	0.97	0.14 (-0.04, 0.33)	0.12
Nephrotoxin avoidance score	-0.32 (-0.97, 0.33)	0.33	-0.07 (-0.33, 0.19)	0.59	0.12 (-0.15, 0.38)	0.38
Blood glucose test score*	-1.12 (-4.29, 2.05)	0.48	0.94 (-0.24, 2.13)	0.12	-0.37 (-1.54, 0.80)	0.53
Foot check score^	1.32 (-0.35, 2.98)	0.12	0.04 (-0.59, 0.68)	0.89	0.52 (-0.13, 1.16)	0.11

KiKS - Kidney Disease Knowledge Survey score (per standard deviation); PiKS - Perceived Kidney Disease Knowledge Survey score (per standard deviation); CKD – Chronic Kidney Disease

Model adjusted for sex, race, age, education, income, eGFR, urine protein:creatinine, diabetes status, hypertension status, BMI, awareness of CKD diagnosis, number of times in one year evaluated by nephrologist + health literacy, PiKS score, KiKS score

*N=112, ^N=104

Modified STROBE Statement—checklist of items that should be included in reports of observational studies (Cohort/Cross-sectional and case-control studies)

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract Please see abstract
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found In abstract
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported Found in introduction
Objectives	3	State specific objectives, including any prespecified hypotheses Found in introduction
Methods		
Study design	4	Present key elements of study design early in the paper Found in methods
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection Found in methods
Participants	6	(*a*) *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants Found in methods
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable Found in methods
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Found in methods
Bias	9	Describe any efforts to address potential sources of bias Found in statistical analysis section
Study size	10	Explain how the study size was arrived at (if applicable) See methods
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why Included in statistical analysis section
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding
		(*b*) Describe any methods used to examine subgroups and interactions
		(*c*) Explain how missing data were addressed
		(*d*) *Cross-sectional study*—describe analytical methods taking account of sampling strategy
		(*e*) Describe any sensitivity analyses All sections included in statistical methods

Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analyzed
		(c) Use of a flow diagram No follow up in this study – study sample described in methods and in supplementary figure
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders
		(b) Indicate number of participants with missing data for each variable of interest
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount) Found in results
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures Found in results
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included Found in results/Tables
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses Found in results/Tables/Supplemental data
Discussion		
Key results	18	Summarise key results with reference to study objectives Found in discussion
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias Found in discussion
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence Found throughout discussion
Generalisability	21	Discuss the generalisability (external validity) of the study results Found in discussion

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at

http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.