Supplementary Materials:

- **Appendix/Search Strategy**

- **Supplemental Table 1 (sTable 1): Meta-analysis Of Observational Studies in Epidemiology (MOOSE) checklist**

- **Supplemental Tables 2-4 (sTables 2-4): Quality assessment results (Page 3-5)**

- **Supplemental Figure 1 (sFigure 1): Flow diagram of study selection process**

- **Supplemental Figures 2-3 (sFigures 2-3): Funnel plots with results from Egger's regression asymmetry and the Begg's adjusted rank correlation tests**

Appendix/ Searching strategies:

1. **PubMed**

   #1 Renal Insufficiency, Chronic [MeSH Terms] (93499)

   #2 Kidney Failure, Chronic [MeSH Terms] (87329)

   #3 chronic renal insufficiency [MeSH Terms] (92499)

   #4 chronic kidney disease [MeSH Terms] (92499)

   #5 chronic renal dysfunction [MeSH Terms] (92558)

   #6 #1 or #2 or #3 or #4 or #5 (97584)

   #7 social class [MeSH Terms] (35373)

   #8 socioeconomic factors [MeSH Terms] (357543)

   #9 socioeconomic status [MeSH Terms] (33573)

   #10 socioeconomic position [MeSH Terms] (0)

   #11 educational status [MeSH Terms] (43986)

   #12 education level [MeSH Terms] (43986)

   #13 income [MeSH Terms] (53213)

   #14 occupations [MeSH Terms] (28445)

   #15 #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 (357543)

   #16 #6 and #15 (1068)

2. **Embase <1974 to 2015 October 23>**

   #1 socioeconomic status.mp. or exp social status/ (140890)

   #2 exp social class/ or socioeconomic position.mp. (29703)

   #3 exp educational status/ or education level.mp. (56971)

   #4 exp occupation/ (233242)

   #5 exp income/ or income level.mp. (76359)

   #6 #1 or #2 or #3 or #4 or #5 (388807)

   #7 chronic kidney disease.mp. or exp chronic kidney disease/ (52366)

   #8 chronic renal insufficiency.mp. or exp chronic kidney failure/ (58873)

   #9 chronic renal dysfunction.mp. (342)

   #10 #7 or #8 or #9 (109688)

   #11 #6 and #10 (2072)

sTable 1 Meta-analysis Of Observational Studies in Epidemiology (MOOSE) checklist

MOOSE Checklist		
Criteria		**Brief description of how the criteria were handled in the meta-analysis**
Reporting of background should include		
√	Problem definition	Socioeconomic status (SES) has long been conjectured to be associated with incidence and progression of chronic kidney disease (CKD), however, quantitative characterizations of such associations have been much less examined. **[Page 5]**
√	Hypothesis statement	We hypothesize that a body of research exist, but have obvious limitations, inconsistency and various estimates and methodology. **[Page 5]**
√	Description of study outcomes	Quantitative characterizations (effect size and statistical significance) of associations of key indicators of SES with incidence and progression of CKD. **[Page 5-6]**
√	Type of exposure or intervention used	Each key indicator of SES such as income, education, occupation, and combined SES. **[Page 5-6]**
√	Type of study designs used	Meta-analysis **[Page 5]**
√	Study population	Adult patients diagnosed with CKD. **[Page 5-6]**
Reporting of search strategy should include		
√	Qualifications of searchers	Most searchers are public health experts and information specialists. Their credentials are indicated in the author list. **[Page 1]**
√	Search strategy, including time period included in the synthesis and keywords	MEDLINE and EMBASE from 1974 to March 2017; Details of our search strategy and terms are presented in Supplementary Material. **[Page 6-7]**
√	Databases and registries searched	MEDLINE and EMBASE **[Page 6-7]**
√	Search software used, name and version, including special features	We did not employ a search software. EndNote was used to merge retrieved citations
√	Use of hand searching	We hand-searched references of retrieved papers for additional references.
√	List of citations located and those excluded, including justifications	Details of the literature search process are outlined in the flow diagram. **[Supplementary material-sFigure 1]**
√	Method of addressing articles published in languages other than English	No restrictions on languages or countries of publication were imposed, to diminish publication bias due to language. **[Page 6]**
√	Method of handling abstracts and unpublished studies	We did not include unpublished or abstract only publications. **[Page 6]**
√	Description of any contact with authors	We contacted authors for outcome- relative inequality index, although not taken into use. E-mails are available to prove it.
Reporting of methods should include		
√	Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	Detailed inclusion and exclusion criteria were described in the methods section. **[Page 7]**
√	Rationale for the selection and coding of data	Data extracted from each of the studies were relevant to the population characteristics, study design, and outcome of interest. **[Page 7]**
√	Assessment of confounding	Subgroup and sensitivity analyses were conducted to

		distinguish possible confounders. **[Page 9-10]**
√	Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results	**[Supplementary material-sTables2-4]**
√	Assessment of heterogeneity	A random-effects model of DerSimoniane-Laird was performed, which takes into account the within and between-study variations. Heterogeneity for each subgroup are listed in Table2-3, and change of heterogeneity are shown in sensitivity analyses. **[Page 9-10; Table2-3]**
√	Description of statistical methods in sufficient detail to be replicated	Description of methods of meta-analyses, subgroup analyses and sensitivity analyses are detailed in the methods. **[Page 8-10]**
√	Provision of appropriate tables and graphics	We included 2 subgroup analyses tables for CKD incidence and progression respectively, 2 forest plot of all studies with respects to different SES indicators; 1 flow diagram, 1 table for characteristics of included studies, search strategies, quality assessment and publication bias results are available in Online Supplement. **[Table1-3; Figure1-3; Supplementary material]**
Reporting of results should include		
√	Graph summarizing individual study estimates and overall estimate	**Figure 1-3**
√	Table giving descriptive information for each study included	**Table1; Page 12-13**
√	Results of sensitivity testing	Shown respectively in "Results-CKD incidence and progression". **[Page 15]**
√	Indication of statistical uncertainty of findings	95% confidence intervals were presented with all relative estimates (ORs or RRs). **[Table 2-3; Page 13-17]**
Reporting of discussion should include		
√	Quantitative assessment of bias	Apart from funnel plots, Begg's and Egger's tests were performed to quantify the publication bias. **[Page 18].**
N/A	Justification for exclusion	N/A
Reporting of conclusions should include		
√	Consideration of alternative explanations for observed results	Based on the potential mechanism linking SES indicators and CKD incidence and progress, and limited number of studies on SES and CKD progression, we drew the final conclusions synthesizing incidence and progression of CKD together. **[Page 19/23]**
√	Generalization of the conclusions	We discussed that the evidence of the effect of lower SES on CKD progression was still insufficient due to the limited number of studies. **[Page 19]**
√	Guidelines for future research	More effective CKD prevention programs combined different countries' socioeconomic backgrounds should be taken into consideration. **[Page 22]**
√	Disclosure of funding source	This work was partially supported by the international cooperation project (2016HH0069) funded by Science and Technology Department of Sichuan Province, China. **[Page1/23]**

Supplementary Tables 2-4 Quality assessment results

sTable 2 AHRQ--- Prevalence Study Quality Assessment

	1	2	3	4	5	6	7	8	9	10	11	Total scores	Quality
Al-Qaoud/2011	√	√	√	√	√	×	×	√	×	√	/	6	Middle
Amato, D/2005	√	√	√	√	×	√	√	√	×	√	/	8	High
Barreto, S. M./2016	√	√	√	√	×	√	×	√	×	√	×	7	Middle
Choi, A. I./2011	√	√	√	/	×	√	√	/	√	√	/	7	Middle
Chudek, J/2014	√	×	×	√	×	√	×	√	×	×	/	4	Low
Crews, D.C/2010	√	√	√	/	×	√	√	√	√	√	/	8	High
Fisher, M. A/2008	√	√	√	/	×	√	√	/	√	√	/	7	Middle
Flessner, M.F/2009	√	×	×	√	×	√	√	√	×	√	/	6	Middle
Fraser, S.D/2014	√	√	√	/	×	√	√	/	√	√	/	7	Middle
Lin, M. Y./2013	√	√	√	/	×	√	√	/	√	√	/	7	Middle
Liu, Q./2012	√	√	√	/	×	√	√	/	√	√	/	7	Middle
Martins, D/2006	√	√	√	/	×	√	√	√	√	√	/	8	High
Seck, S. M./2014	√	√	×	√	√	√	×	√	×	√	/	7	Middle
So, B.H./2015	√	√	√	/	/	√	√	√	/	×	/	6	Middle
Suarez, J. J./2015	√	√	√	√	×	√	×	√	×	√	×	7	Middle
Tamrat, R./2015	√	√	√	/	×	√	√	√	/	√	/	7	Middle
Vart, P./2013	√	√	√	√	×	√	√	√	√	√	/	9	High
Vart,P./2015	√	√	√	√	×	√	√	/	√	√	/	7	Middle
White, S.L/2008	√	√	√	√	√	√	×	√	√	√	/	8	High
Wolf, G./2011	√	√	√	×	×	√	√	√	√	√	/	8	High
Xue, L./2014	√	√	√	√	×	√	×	√	√	×	/	6	Middle

"√" for yes; "×" for no; "/" for not mentioned or can't be confirmed.
Ranking criteria: 8-11 scores for "High"; 5-7 scores for "Middle"; 0-4 scores for "Low".
Item1-Define the source of information (study, record review);
Item2-List inclusion and exclusion criteria for exposed and unexposed subjects;
Item3-Indicate time period used for identifying patients;
Item4-Indicate whether or not subjects were consecutive if not population-based;
Item5-Indicate if evaluators of subjective components of study were masked to other aspects of the status of the participants;
Item6-Describe any assessments undertaken for quality assurance purposes (e.g , test/retest of primary outcome measurements)
Item7-Explain any patient exclusions from analysis;
Item8-Describe how confounding was assessed and/or controlled;
Item9-If applicable, explain how missing data were handled in the analysis;
Item10-Summarize patient response rates and completeness of data collection;
Item11-Clarify what follow-up, if any, was expected and the percentage of patients for which incomplete data or follow-up was obtained.

sTable 3 NEWCASTLE-OTTAWA QUALITY ASSESSMENT SCALE---COHORT STUDIES

Author's name	selection	comparability	exposure	total	Quality
CKD Incidence					
Bruce, M. A./2010	***	*	*	5	Middle
Drey, N./2003	***	*	**	6	Middle
Guessous, I./2014	***	*	**	6	Middle
Shoham,D.A./2008	****	*	***	8	High
Tohidi, M./2012	****	*	**	7	High
CKD Progression					
Akrawi, D. S./2014	****	**	*	7	High
Couchoud, C/2012	***	*	*	5	Middle
Crews, D. C/2014	***	**	*	6	Middle
Hossain, M. P. /2012	***	**	*	6	Middle
Hsu/2009	***	**	**	7	High
Klag, M. J./1997	***	**	**	7	High
Lipworth, L./2012	***	**	**	7	High
Ward, M. M/2008	****	*	**	7	High
Young, E. W/ 1994	**	*	**	5	Middle
Young, B. A/2016	****	**	**	8	High
Merkin, S. S/2005	****	*	***	8	High
Merkin, S. S/2007	****	*	***	8	High

**sTable 4 NEWCASTLE-OTTAWA QUALITY ASSESSMENT SCALE -------CASE CONTROL STUDIES**

Author's name	Selection	Comparability	Outcome	total	quality
CKD Incidence					
Hsieh, C. F./2012	***	*	**	6	Middle
Fored, C. M./2003	****	*	**	7	High
Su, S. L./2015	****	*	***	8	High
CKD Progression					
Tsai, S. Y./2008	***	*	**	6	Middle
Perneger, T. V./1995	***	**	*	6	Middle

Ranking criteria: 0-3 stars for "Low"; 4-6 stars for "Middle"; 7-9 stars for "High".
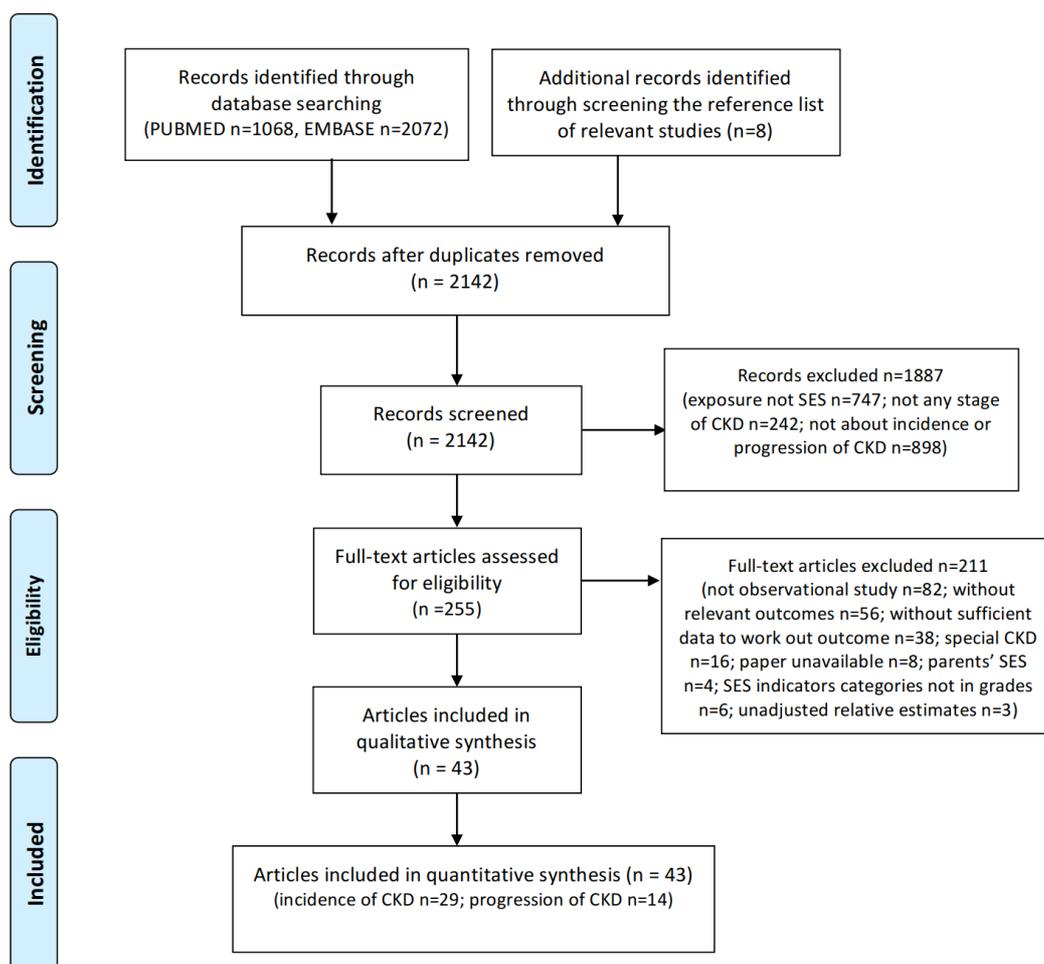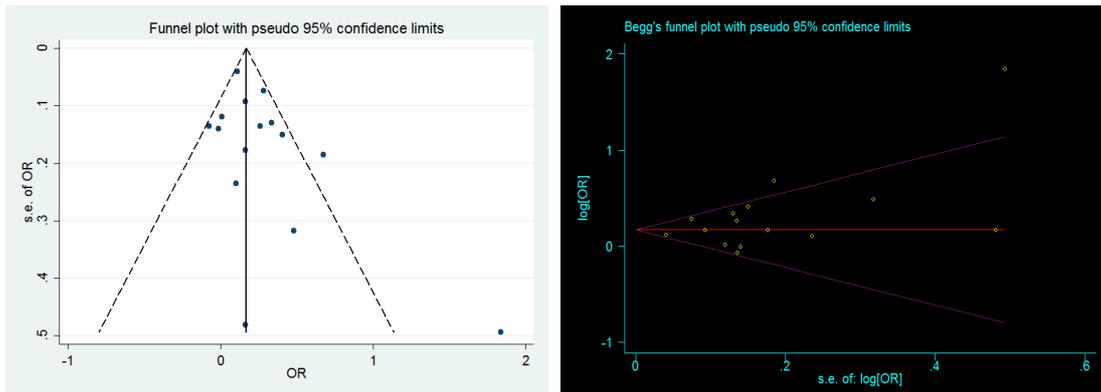
sFigure 1 Flow diagram of study selection process.

sFigure 2.1 Publication bias of included studies on the association between income and CKD incidence.
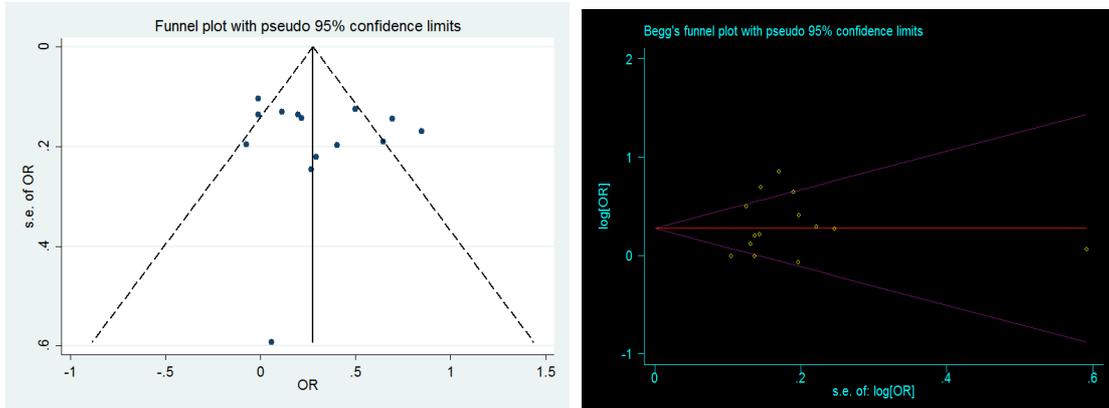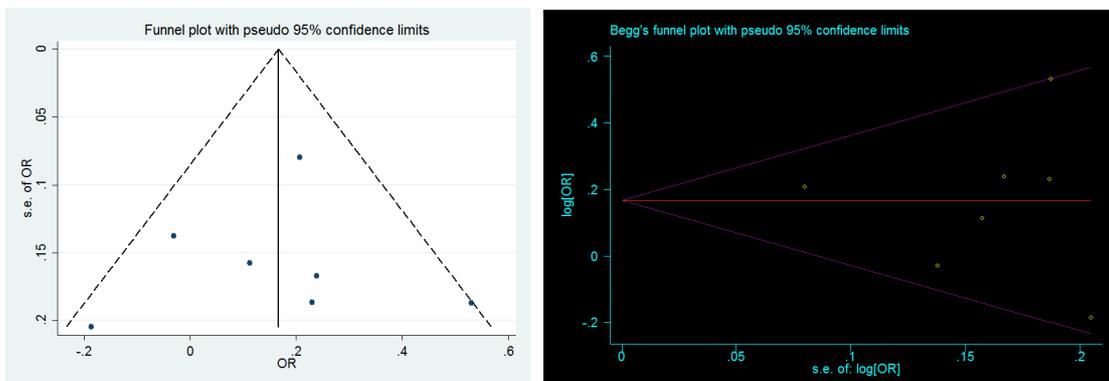

(Begg's test P=0.4; Egger's test P=0.5)

sFigure 2.2 Publication bias of included studies on the association between education and CKD incidence.

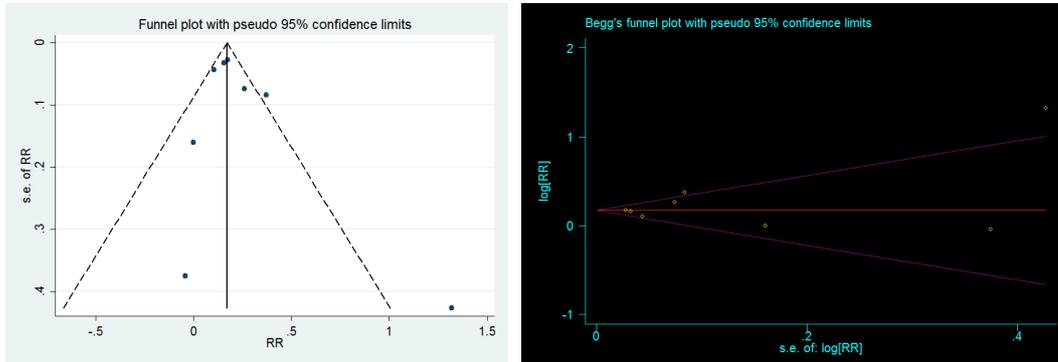(Begg's test P=0.1; Egger's test P=0.09)

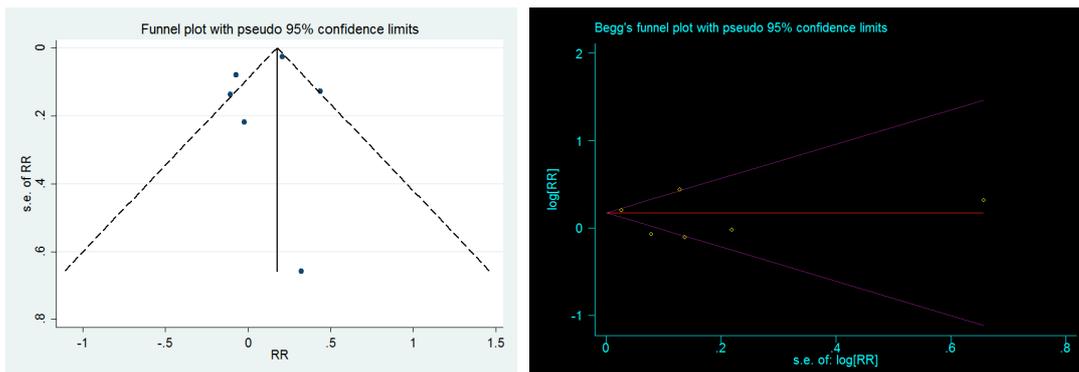**sFigure 2.3** Publication bias of included studies on the association between occupation and CKD incidence.

(Begg's test P=1.0 ; Egger's test P=0.8)

sFigure 3.1 Publication bias of included studies on the association between income and CKD progression.

(Begg's test P=0.5; Egger's test P=0.3)

sFigure 3.2 Publication bias of included studies on the association between education and CKD progression.

(Begg's test P=1.0; Egger's test P=0.5)