



Associations of Socioeconomic Status with Incidence and Progression of Chronic Kidney Disease: A Meta-analysis

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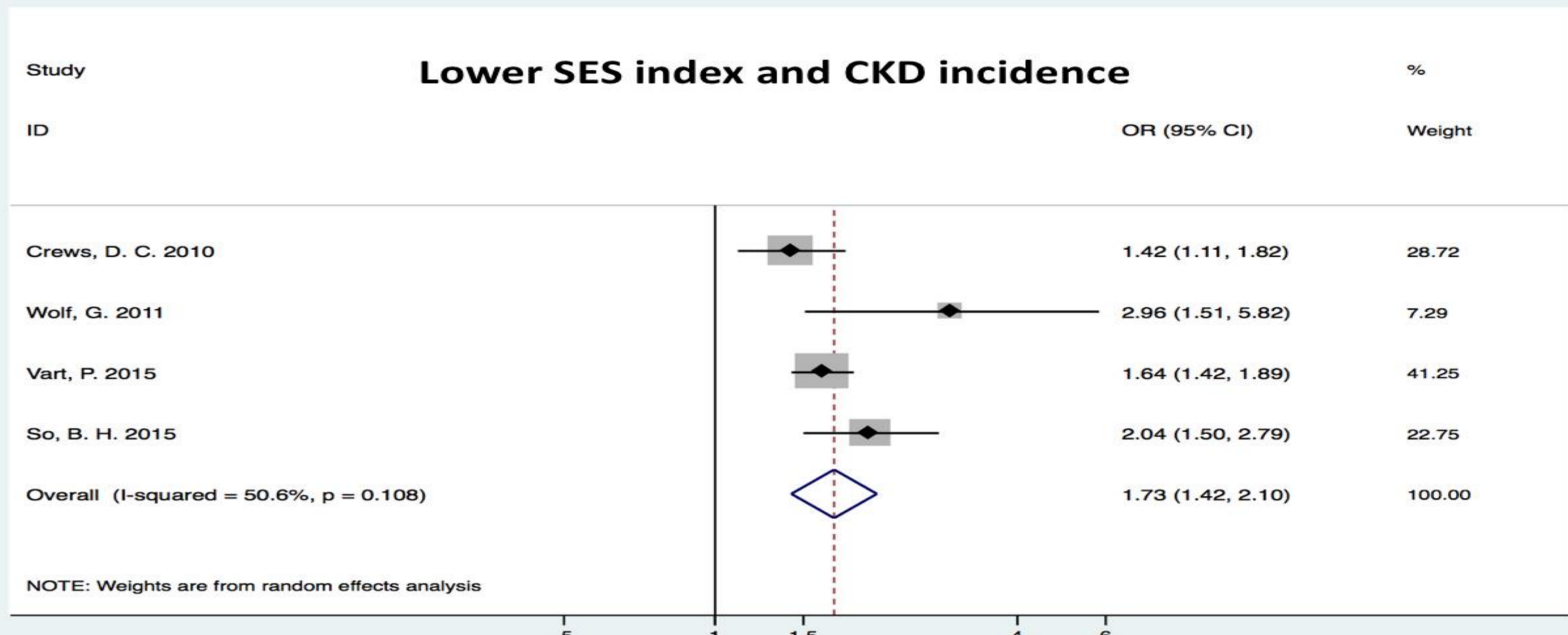
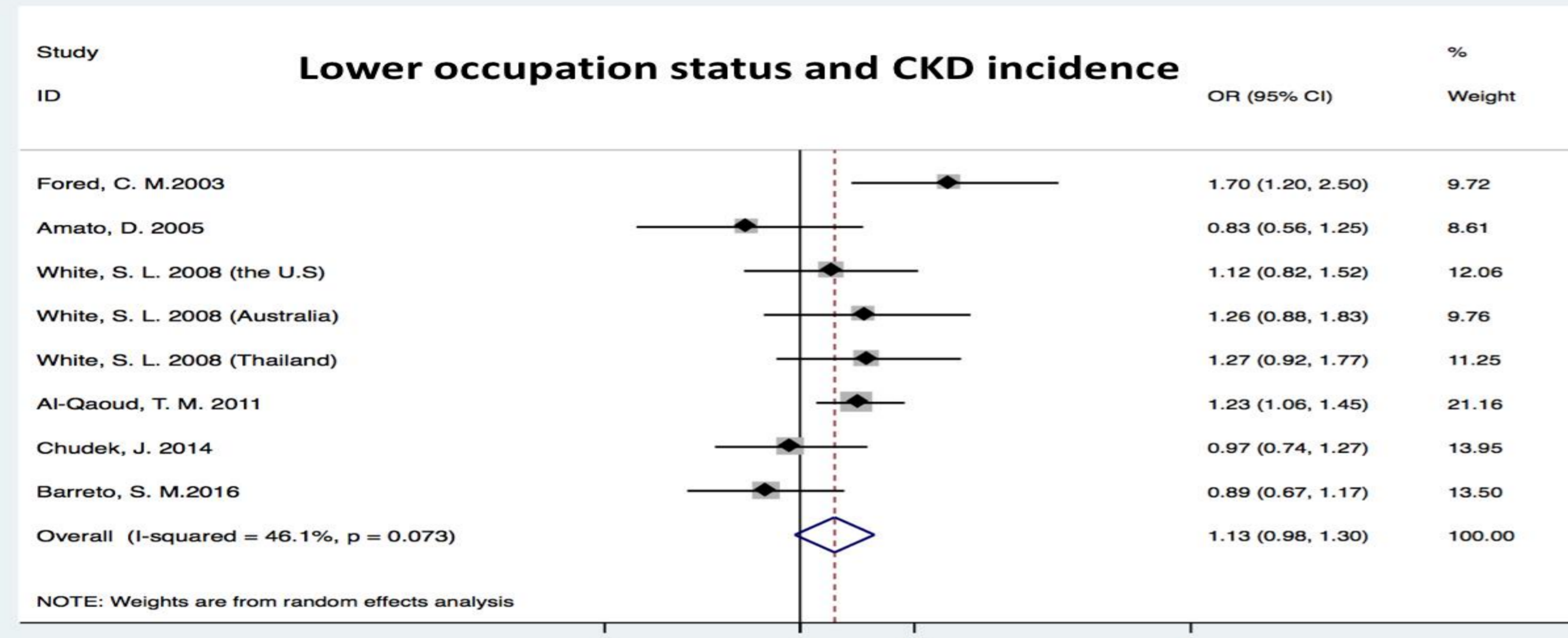
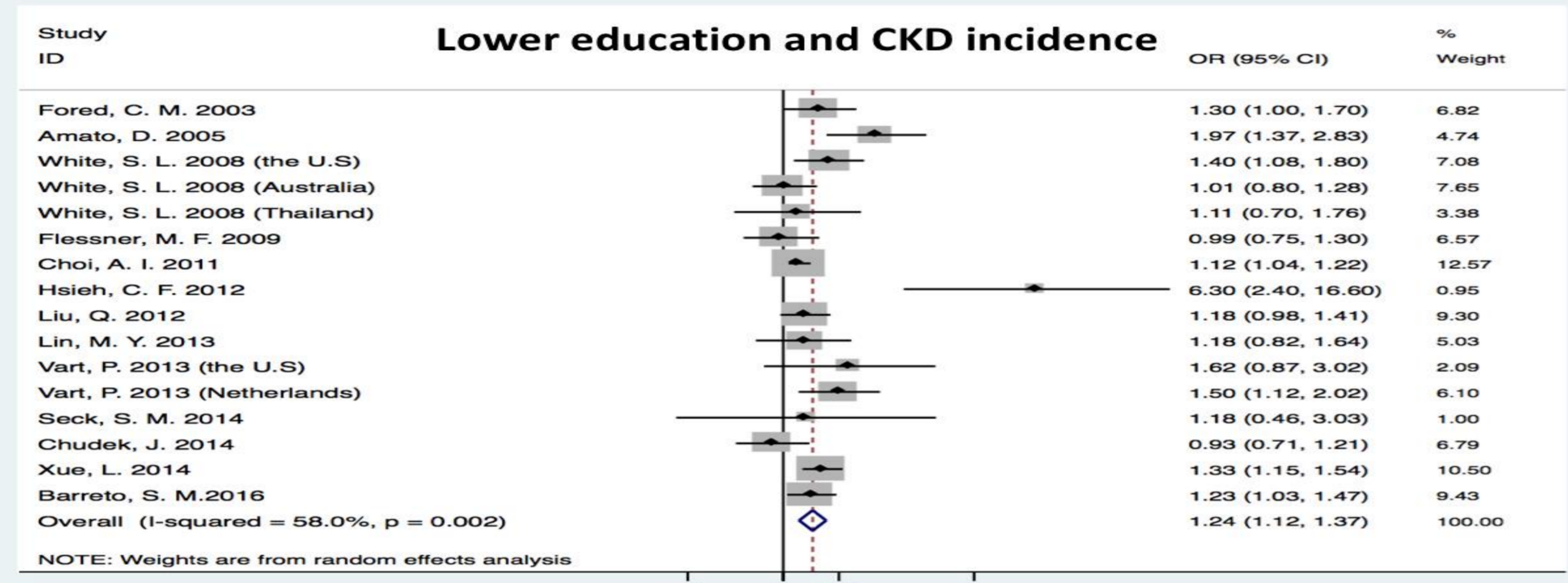
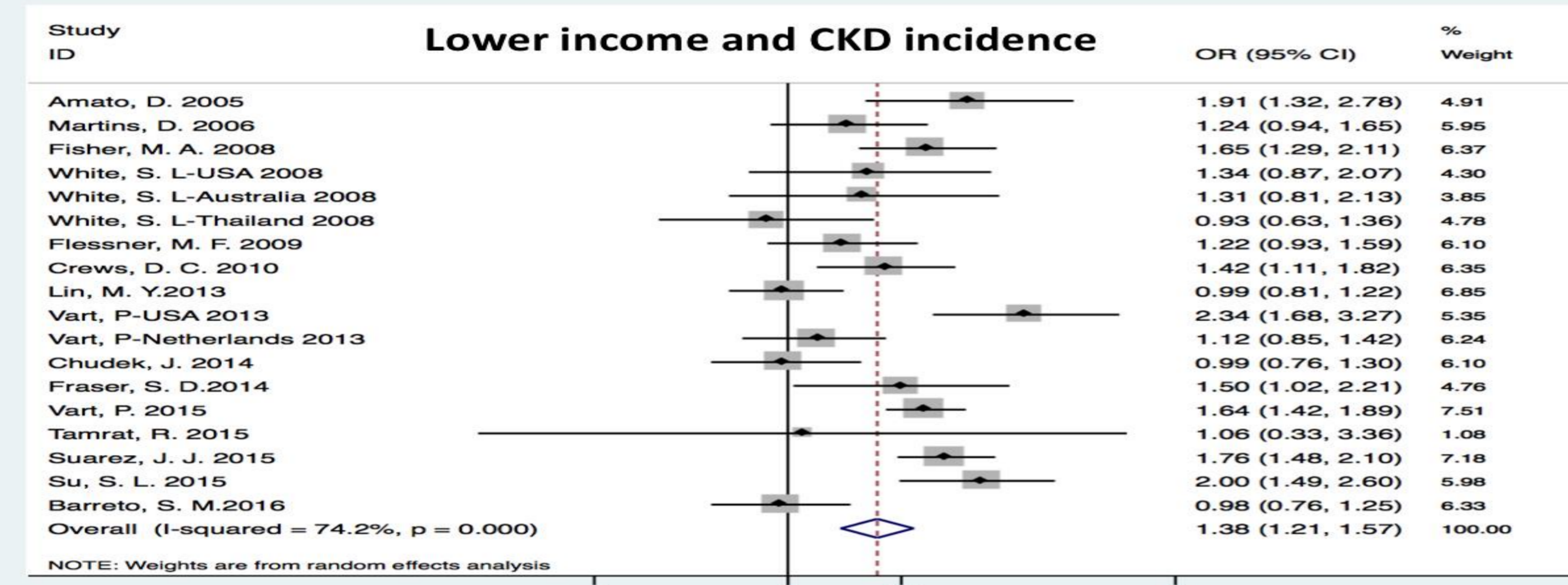
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OBJECTIVES

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. This paper registers a first effort to quantitatively evaluate associations between CKD and each key indicator of SES such as income, education, occupation, and combined SES index, via a meta-analysis.

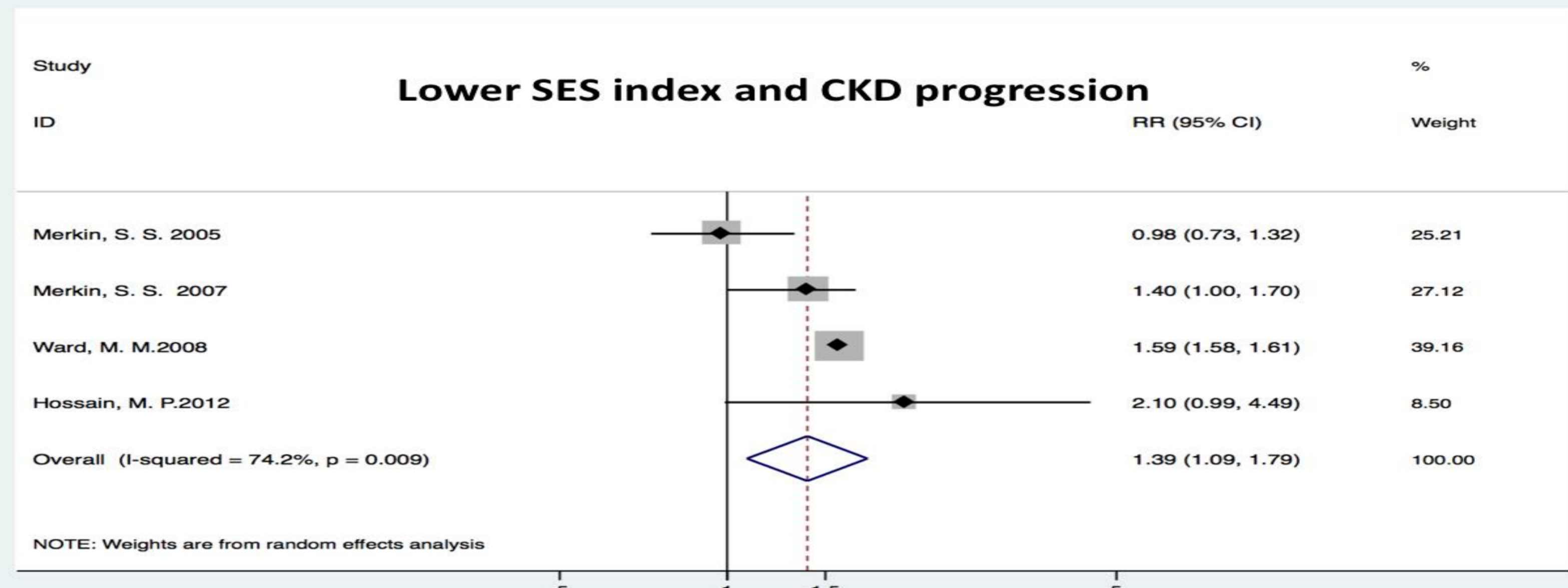
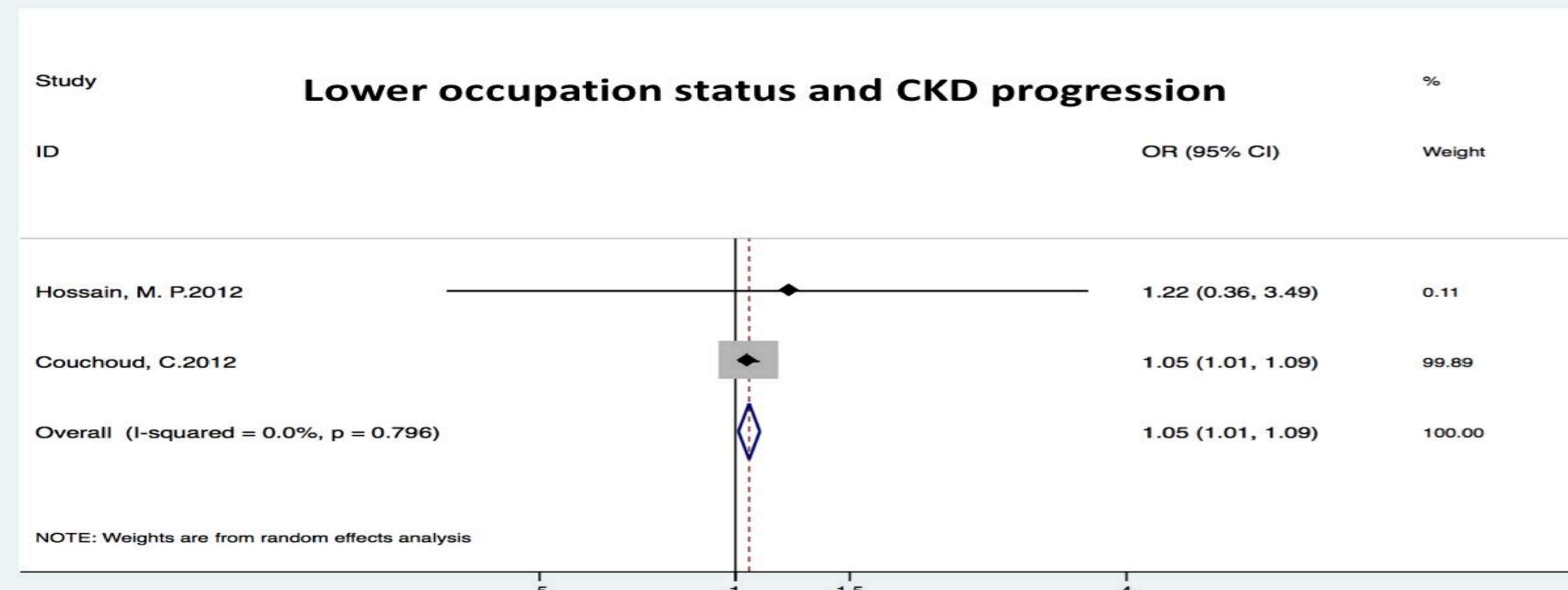
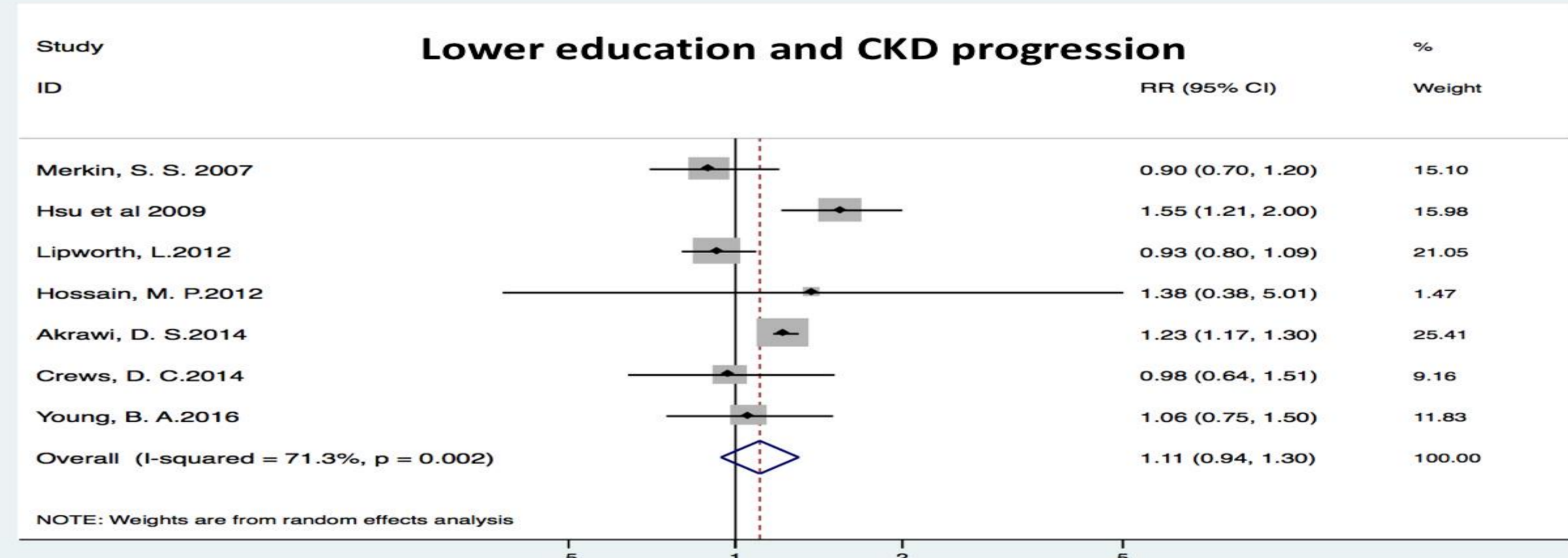
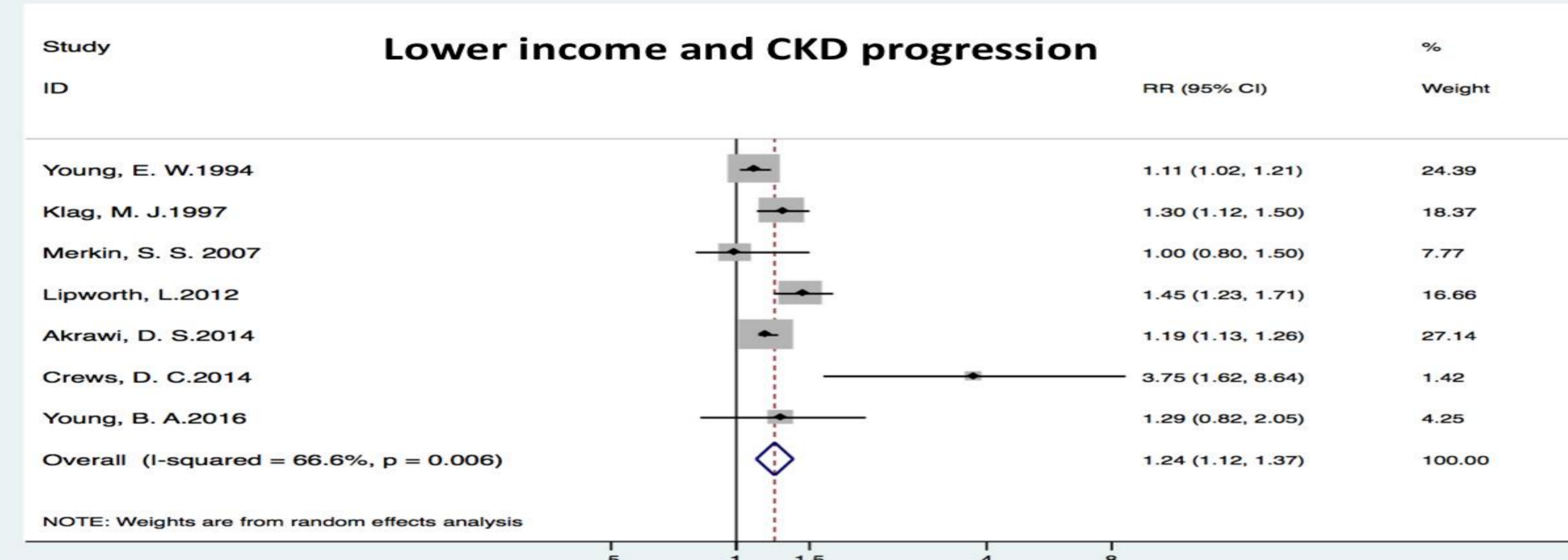
METHODS

A systematic literature review was performed in Medline and EMBASE to identify relevant observational studies on associations between SES and incidence and progression of CKD (published from 1974 to March 2017). Individual results were meta-analyzed based on a random effect model, strictly complying with MOOSE checklists.



RESULTS

Of 2,142 relevant citations, 43 published articles met our inclusion criteria. We found that incidence of CKD was associated with majority of SES indicators, including: lower income (OR 1.38, 95% CI [1.21,1.57] P<0.001; I²=74.2% P<0.001); lower education (OR 1.24, 95% CI [1.12,1.37] P<0.001; I²=58.0% P=0.00);) and lower combined SES index (OR 1.73, 95% CI [1.31,2.07] P<0.001; I²=50.6% P=0.108). In contrast, the lower income, occupation level and combined SES index were found to be significantly associated with progression to end-stage renal disease: (RR 1.24, 95% CI [1.12,1.37] P<0.001; I²=66.6% P=0.006), (RR 1.05, 95% CI [1.01, 1.09] P=0.012; I²=0.0% P=0.796) and (RR 1.39, 95% CI [1.09,1.79] P=0.009; I²=74.2% P=0.009). Subgroup analyses, in general, confirmed the overall results, except for some subgroup analyses presenting inverse association related to special socioeconomic background and more CKD related risk factors adjusted.



CONCLUSIONS

The lower income was the main indicator associated with incidence and progression of CKD, while the lower education was significantly associated with incidence of CKD only. Evidence on the association between occupation level and combined SES index was insufficient.

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