Reviewer’s report

Title: Association of kidney function-related dietary pattern, weight status, and cardiovascular risk factors with severity of impaired kidney function in middle-aged and older adults with chronic kidney disease: a cross-sectional population study

Version: 1 Date: 29 Jan 2019

Reviewer: Michalis Katsoulis

Reviewer's report:

This paper focuses on the association of kidney function-related dietary pattern, weight status, and cardiovascular risk factors with severity of impaired kidney function.

The authors report that weight and cardiovascular risk factors were related to increased risk of moderately/severely impaired kidney function. They also mention that kidney function-related dietary pattern was related to bodyweight, increased cardiovascular risk and the risk of impaired kidney function.

The main problem of this analysis is the limitation imposed by the design of the study. This is a cross-sectional study, so any relationship presented by the authors is prone to reverse causation. Even if the authors do not refer to causal relationships, the aforementioned associations are not interesting if there is no evidence whether, eg CVD risk is increased due to a specific dietary pattern.

Another problem of this paper is that they use a method (reduced rank regression, RRR) which is not widely used. They also mention that "RRR-derived dietary pattern is more likely to be associated with health-related outcomes" (lines 94-95), without backing this argument. They could have also used PCA or an a priori score and compare the findings to check if their results remain robust. In any case, they would not overcome the problem of reverse causation I mentioned before.

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