Author’s response to reviews

Title: Associations between dietary patterns and blood pressure in a sample of Australian adults

Authors:
Claire Margerison (claire.margerison@deakin.edu.au)
Lynnette J Riddell (lynn.riddell@deakin.edu.au)
Sarah A. McNaughton (sarah.mcnaughton@deakin.edu.au)
Caryl A Nowson (caryl.nowson@deakin.edu.au)

Version: 2 Date: 18 Dec 2019

Author’s response to reviews:

Reviewer #1: I recommend the following changes:

1) Including this (or similar) would be helpful for clarification: "39% of the sample on hypertensive medication is consistent with the incidence of hypertension in the adult community in this age group (about 34% of Australians aged 18 and over have high blood pressure, based on measured data from the 2017-18 Australian Bureau of Statistics National Health Survey, and this increases with age. The mean age in this study was 55 years).
Participants also needed to have been on the AHT medication for enough time (screening question) that their blood pressure was stable (usually still in the hypertensive range or at least above recommended levels, but certainly lower than without the medication!!)."

Have inserted as requested on page 11 as a footnote in Table 1. Please move or delete as required as I cannot find an obvious place for this sort of statement.

2) re the issue of electrolytes and BP, apart from Na & K, I would nevertheless relate to calcium as a known moderator of BP (and Mg++?). If there is no data, then a comment would be appropriate, it seems to me.

The focus of this study was sodium and potassium and the sodium:potassium ratio, and it was outside the scope of this paper to look at other nutrients but as mentioned previously, it would be interesting to look at them. There is much more evidence in the literature that dietary sodium and potassium impact on blood pressure than dietary calcium and magnesium, particularly when assessing intake from dietary sources, excluding supplements.
Extensive research has been conducted on the blood pressure lowering effect of low sodium diets and there is a vast amount of evidence supporting a strong link between dietary sodium and blood pressure. It is now well accepted that reduced dietary sodium intake is associated with a fall in blood pressure in both hypertensive and normotensive individuals. Increased potassium is associated with a fall in blood pressure in both hypertensive and normotensive individuals. Whilst the evidence for a blood pressure lowering effect of increased potassium may not be as strong as that for decreased sodium, there is still adequate evidence to indicate that potassium must also be considered in any dietary approach to the treatment or prevention of hypertension. The blood pressure effects of dietary calcium (Griffith, Guyatt
et al. 1999; Margolis, Ray et al. 2008) and magnesium (Jee, Miller et al. 2002) have also been examined. Overall, the evidence to support the inclusion of calcium supplementation as a potential treatment for hypertension does not yet exist (Dickinson, Mason et al. 2006; Appel, Giles et al. 2010). Similarly for magnesium, results from clinical trials are too small or inconsistent (Dickinson, Mason et al. 2006; Appel, Giles et al. 2010).

3) Re the alcohol issue, am I correct in estimating this as a bottle of Vodka or Arak etc per person per week?
This was a screening question listing the maximum alcohol intake someone could consume without being excluded at the screening stage. 30 standard drinks in the week equates to just over 4 standard drinks per night or just over a bottle of spirits a week. When we measured intake on 2 days via 24-hr recall, the actual mean intake of the 251 participants was much less (mean 18.1g/day, so just under 2 standard drinks, for the 122 participants who consumed alcohol on the days of the diet recall). Associations were also adjusted separately for alcohol intake.

Reviewer #2: The authors have satisfactorily responded to the previous comments. However, there are minor wording errors that should be corrected. The authors should carefully review the paper for such errors. For example, in line 213, should probably be "dim sums". Line 215 includes an extra "were".

Thanks for this. The errors in lines 213 and 215 have been amended as requested. A thorough spelling and grammar check has also been performed. I also added in (wt) and (ht) to define these abbreviations in line 145 used in the equation in line 146.