Author’s response to reviews

Title: Dietary flavonoid intake in older adults: How many days of dietary assessment are required and what is the impact of seasonality?

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Author’s response to reviews:

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Reviewer #1

Overall this is a very well written paper which could contribute important evidence to this field. However, there are minor changes required including the addition of more detail within results on the number of days of dietary assessment required for determining flavonoid intake.

Thank you for taking the time to review our manuscript.

Abstract:

1. Page 2, line 32: Please amend abbreviation from WRF to be WFR

Thank you, the typo has been amended.

Introduction:

2. Page 3, line 65: Please briefly summarise the "well-known" limitations that you refer to at the end of this sentence e.g. including differences in food composition databases, choice of dietary assessment method etc.
We have included the term ‘described below’ as the next paragraph explains the limitations for assessing flavonoid intakes including FCDBs and dietary assessment methods. To expand upon this section, we have described and critiqued the most common methods (retrospective FFQs) that are applied (L71-81)

3. Page 3, lines 71 & 74: Please amend abbreviations from FCBDs to FCDBs

The typos of this abbreviation have been amended throughout.

4. Page 5, line 106-107: You mention that the number of days required to assess flavonoid intake is unclear, could you estimate from other nutrients such as energy? Including this would also help justify your selection of 12 days?

We have now discussed the number of days required for the assessment of other nutrients (L119-125) and used this to justify the use of 12 days of WFR data (L171-174).

Methods:

5. Page 6, line 139: The original study randomly selected a sub-sample of 79 to conduct WFRs with, please explain how this number was chosen and what randomisation method was used?

More detail has been provided on the number chosen, and reference to the validation study has been explicitly provided (L165-166).

6. Page 7, line 151-151: Please explain why the USDA FCDB was used for Australian dietary data.

The use of the USDA database has now been justified (L86-76 and L184-L192)

Results:

7. Page 9, line 204: The heading states "Days required for assessing flavonoid intake" yet there are no results reported on this. How many days are required? Is it the same for total flavonoids and sub-classes? Summarise between and within differences for flavonoids and sub-classes?

We have now included text discussing the number of days of dietary assessment required for total flavonoids and subclasses and made explicit reference to table 1. We have also commented on why some subclasses needed lower number of days (higher between-person variation) (L251-256)

Page 9, line 213-214: There is also no attempt at summarising mean intakes across all seasons for those that were and were not different.
We have extended the results section regarding the seasonal comparison (L261-267) and expanded the discussion section to reflect this too, based on your comments (L357-365)

Discussion:

8. Page 10, line 229: Most of the discussion is around the within-individual differences yet your results report that the between-individual differences were greater than within (line 207-208), therefore some discussion should focus on this. Although, you then go on to say in line 231 that the range for within is larger than between. Please make this clearer in results and discussion if you are referring to different results or if in fact within differences were larger.

We have added to the discussion regarding the between-person variation (L303-308).

Thank you for highlighting this confusing sentence. W3 have updated the sentence, which we hope makes it clearer that this was not comparing within and between variation ranges, but taken together both these between and within values are very high when comparing them to the 25% recommended for energy intakes (L285-289)

9. Page 11, line 248: The discussion on use of FCDBs could include justification for your use of USDA rather than an Australian database and whether this was a limitation of your study.

WE have added further discussion about the limitations but appropriateness of the use of the USDA database in the discussion (pL404-414)

Conclusion:

10. Please also include a statement in your conclusion that further research is still required to confirm the appropriate number of days to accurately determine flavonoid intake and that FCDBs need to be improved to include data from more appropriate dietary assessment methods and across all seasons.

The conclusion has been updated to reflect your suggested statement (L428-431)

Reviewer #2

This is a very well written manuscript that clearly sets out the methodology required for this type of analysis. My comments relate to additional information being added to the manuscript.

Thank you for taking the time to review our manuscript.

1. Choice of flavonoid database is an important part of this manuscript. Could further justification of the choice of database be added, specifically as to why an Australian database was not an appropriate choice (eg incomplete etc) and why one from US was.
The choice of the USDA database for this study has been further justified in our methods section (L184-L192)

2. Please highlight in the methods section that the data was collected in 1992(?) and explain if there are any problems aligning the chosen database with dietary intake data of this era.

The year of data collection has been added to the methods (study population) section. The issues with aligning the database to the dietary intake data has been discussed further in the limitation section (L163 and L401-414)

3. Could further information be added as to how dietary analysis was possible from Microsoft Access? Was a program or database designed for this use? If so, by who and some basic details of how it did so.

More detail has been added to clarify the Microsoft Access database, which was used to link the large datasets of the BMES and to explain the process of exporting the table to SPSS (L177-179 and L194-195)

4. Could IQRs be added to table 1? As stated, the range of values varies widely and the IQR would give comparison to the mean/sd.

IQR has been added to table 1 and referred to in text (L247 and L708)

5. Could the results from the Kruskal Wallis (Table 2 equiv) be added as supplementary material?

Results of the Kruskal Wallis have been added the end of the document as a supplementary table (p32, L720)

6. Could a consent/ethics approval statement be added to the paragraph on study population?

Consent statement has been added (L156-160)

7. Full stop required in Author Contributions.

Full stop has been added.