Title: Factors affecting acceptability of an email-based intervention to increase fruit and vegetable consumption.

Authors:
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Barbara A Mullan (barbara.mullan@curtin.edu.au)

Version: 4 Date: 15 September 2014

Author's response to reviews: see over
Dear Dr. Byrd-Bredbenner,

We would like to thank you for your continued consideration of this manuscript (MS: 7782683151310109) in BMC Public Health.

We would also like to sincerely thank the reviewers for their valuable feedback regarding this manuscript. We believe that all three reviewers raised important points about the manuscript in its previous form and that the present version of the manuscript is much stronger in light of the comments from both reviewers and the corresponding changes. Our responses to each of the points raised by each reviewer are outlined below.

Regards,
The Authors
Reviewer #1

Reviewer Comment | Author Response
--- | ---
Lines 77-78: More details on the TPB measures and how fruit and vegetable intake were assessed is needed in the methods section. For example, what is the internal consistency and validity of the TPB measures? Are the response items on a Likert scale? | Thank you for this suggestion, additional information about the TPB measures (including internal validity) been added to the methods.

Manuscript revision: Lines 95-108

Participants completed measures of fruit and vegetable intake (servings/day) and TPB variables (intention, subjective norm, perceived behavioural control and attitude) at baseline and immediately post-intervention.

TPB variables were measured using the same measure described in previous evaluations of the Fresh Facts intervention [8]. Intention, attitude, subjective norm and PBC were all assessed using a 100 point visual analogue scale (where higher scores indicated stronger/more positive levels of that construct). Internal consistency for the TPB measures was good (Cronbach’s alphas= .718 - .929).

As in evaluations of the efficacy of Fresh Facts [8], fruit and vegetable consumption was measured using a brief self-report measure of previous day consumption (e.g. How many servings of fruit did you eat yesterday?). Scores were summed to create a composite score of the previous day fruit and vegetable consumption.

Lines 79-80: Can you describe in more detail the established measure used to assess intervention acceptability. Were the response items on a type of Likert scale? | Additional information about the acceptability questionnaire have been added to the methods. We believe that the addition of this information about the methods (in combination with the changes made in response to the above comment) greatly improve the readability of this paper.

Manuscript revision: Lines 99-108

Intervention acceptability was assessed using an established measure [11, 12] immediately post-intervention. This measure assessed participants beliefs about the intervention on a 6 point Likert scale (e.g. I think the email messages were... interesting: 1=strong disagree, 6=strongly agree). Intervention materials were delivered to the participant’s nominated email address on days 1-30.

Please state the limitations to this study in the discussion. One limitation is participants were only university students so findings are not generalizable to all audiences. | A limitation section is now included in the discussion. We agree that the use of university students limits generalizability and this is now clearly acknowledged in the manuscript.
Strengths and limitations of the present study

In addition to the issues discussed above, there are a number of factors that should be taken into account when interpreting these results. Firstly, the results presented here consider the feasibility of the Fresh Facts intervention only in the context of university undergraduate students. While the use of a study population that closely matched to the target population of the intervention is appropriate to the evaluation of the intervention itself – this limits the extent to which relationships reported in this study would be generalizable to other populations. As such, readers should be cautious when seeking to apply the results of this study to other contexts. This study contributes to a small, but growing, literature on the acceptability of behaviour change interventions. The consideration of the relationship between participant and intervention characteristics, attrition, effectiveness, and intervention acceptability is a relatively new advance within this context and is a strength of this stage of Fresh Facts evaluation. These analyses not only provide valuable information about the acceptability of Fresh Facts but also provide important data about potential threats intervention dissemination that may also be relevant for other intervention programmes.

The authors should pay attention to the BMC public health instructions for authors. If I am correct, the abstract should have a separate heading for “methods” and “results”.

Background: Fresh Facts is a 30-day email-delivered intervention designed to increase the fruit and vegetable consumption of Australian young adults. This study investigated the extent to which the program was acceptable to members of the target audience and examined the relationships between participant and intervention characteristics, attrition, effectiveness, and acceptability ratings.

Methods: Young adults were randomised to two levels of message frequency: high-frequency (n=102), low-frequency (n=173). Individuals in the high-frequency group received daily emails while individuals in the low-frequency group received an email every 3 days.

Results: Individuals in the high-frequency group were more likely to indicate that they received too many emails than individuals in the low-frequency group. No other differences in acceptability were observed. Baseline beliefs about fruit and vegetables were an important predictor of intervention acceptability. In turn, acceptability was associated with a number of indicators of intervention success, including change in fruit and vegetable consumption.

Conclusions: The findings highlight the importance of considering the relationship between these intervention and participant factors and acceptability in intervention design and evaluation. Results support the ongoing use of email-based interventions to target fruit and vegetable consumption within young adults. However, the relationships between beliefs about fruit and vegetable consumption and acceptability suggest that this intervention may be differentially effective depending on individual’s existing beliefs about fruit and vegetable consumption. As such, there is a pressing need to consider these factors in future research in order to minimize attrition and maximize intervention effectiveness when
interventions are implemented outside of a research context.

A separate subheading under the methods section for data analysis would be helpful. As of now, the data analysis is intertwined in the results section. A data analysis subheading has been added as suggested. We agree that this section improves the readability of the results section.

**Manuscript revision: Lines 127-132**

**Data analysis**
Differences in attrition and acceptability between the low- and high-frequency interventions were assessed using independent samples t-tests and chi-squared tests. Chi-squared tests and Pearson’s correlations were used to assess the relationships between acceptability ratings, baseline characteristics and change scores for fruit and vegetable consumption and TPB variables.

Please include a “conclusion” heading after the discussion summarizing findings. Thank you for this suggestion, a conclusion section is now included in the discussion.

**Manuscript revision Lines 260-267**

**Conclusion**
Despite the limitations of the current study, these results broadly support the conclusion that this email delivered intervention is an acceptable tool for promoting increased fruit and vegetable consumption. Individuals in the high-frequency group were more likely to indicate that they received too many emails than individuals in the low-frequency group. However it does appear that high frequency messages can be used without adversely influencing non-frequency related indicators of intervention acceptability (such as credibility and personal relevance).

Table 5 has the same title as Table 4. Please change accordingly. Thank you for your attention to detail; the title for this has been corrected. The correct title for this table is now: “Pearson Correlations between change in beliefs about fruit and vegetable and intervention acceptability ratings”
**Reviewer #2**

<table>
<thead>
<tr>
<th>Reviewer Comment</th>
<th>Author Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many factors of acceptability were rated per Table 3. The only one appearing to have a significant difference between the low-frequency and high-frequency intervention groups appears to be frequency of intervention (“too many emails”). Seeing that this factor of acceptability was the only difference between these two groups (as content remained the same), the study was designed to evaluate the effect of this factor only and differences among the other factors should not be anticipated. However, it would be interesting if a change in frequency led to a perception of decreased content quality. Nevertheless, the discussion appears to misrepresent this finding.</td>
<td>We agree that some of the intervention acceptability rating might be unlikely to differ solely on the basis of intervention message frequency. However we disagree that the “too many emails” item was the only item that could be expected to differ on the basis of frequency. In our view the items annoying and too many emails both directly relate to the frequency of emails. Additionally, given the longer emails included multiple intervention messages within in single email it would be plausible to expect that the combination in emails may influence the perception that those emails were logical, easy to understand, useful, too long, and/or confusing. Finally, as indicated by the Reviewer, there is a risk that a change in frequency could lead to a change in the perception of content quality. In order to fully appreciate the impact of a change in message frequency we feel that it is important to consider the full range of acceptability items. However, in light of this Reviewer’s later comments we do agree that the discussion does overstate these findings in some places. We have amended the discussion in light of each of the specific comments raised below and thoroughly reviewed that discussion section in order to ensure that consideration of the impact of frequency in appropriately qualified.</td>
</tr>
</tbody>
</table>

| Line 143-145: Please consider changing the statement “invention acceptability (with the exception of the view that the intervention consisted of “too many emails”) was not influenced by the frequency of intervention contact is pertinent.” It appears that frequency of the emails in the high-frequency intervention was not acceptable to the majority of subjects in that group. | We agree that this statement overstated the acceptability of the intervention and have amended the relevant section accordingly. This section of the discussion now clearly states that the frequency of the emails in the high-frequency intervention was not acceptable to the majority of subjects in that group. |

**Manuscript revision Lines 191-208**
Previous researchers have noted a need to investigate the role of message frequency in intervention acceptability [15]. It appears that frequency of the emails in the high-frequency intervention was not acceptable to the majority of subjects in that group. While optimal message frequency is likely to be context specific, the finding that other indicators of intervention acceptability were not influenced by the frequency of intervention contact is pertinent. Given the longer emails included multiple intervention messages within in single email it would be plausible to expect that the combination in emails may influence the perception that those emails were logical, easy to understand, useful, too long, and/or confusing. There was also a risk that a change in frequency could have led to a change in the perception of content quality. However, it does not appear that the increased length, and complexity, of the combined email influenced the perception of the intervention content in this manner. This finding suggests that this intervention modality can be delivered with very frequent contact without compromising the other facets of reported acceptability of the intervention. As such, when seeking to design interventions on the basis of this finding future researchers and practitioners should carefully consider the indicators of intervention acceptability that are most relevant to their intervention aims. However they should consider the evidence that “very frequent” contact is likely to be less acceptable to participants than lower frequency contact.

Line 145-147: Here it is argued that very frequent contact did not affect overall acceptability. There does not appear to be a total acceptability score nor could this be developed as too many of the acceptability factors focus on content and only 1 focuses on frequency. The results indicate that the only issue the subjects had with the intervention was the frequency of emails, so it is hard to say that this did not have an effect on the acceptability. In fact, again, frequency of emails was the only designed difference between the two intervention groups…and the only factor in which poor acceptability ratings were provided. The significant difference between groups should reveal that there was an issue with “very frequent contact” and that less frequent contact was more acceptable.

We agree that this statement overstated the acceptability of the intervention and have amended the relevant section accordingly. This section of the discussion now clearly states that “very frequent” contact is likely to be less acceptable to participants than lower frequency contact.

Manuscript revision Lines 191-208

Previous researchers have noted a need to investigate the role of message frequency in intervention acceptability [15]. It appears that frequency of the emails in the high-frequency intervention was not acceptable to the majority of subjects in that group. While optimal message frequency is likely to be context specific, the finding that other indicators of intervention acceptability were not influenced by the frequency of intervention contact is pertinent. Given the longer emails included multiple intervention messages within in single email it would be plausible to expect that the combination in emails may influence the perception that those emails were logical, easy to understand, useful, too long, and/or confusing. There was also a risk that a change in frequency could have led to a change in the perception of content quality. However, it does not appear that
the increased length, and complexity, of the combined email influenced the perception of the intervention content in this manner. This finding suggests that this intervention modality can be delivered with very frequent contact without compromising the other facets of reported acceptability of the intervention. As such, when seeking to design interventions on the basis of this finding future researchers and practitioners should carefully consider the indicators of intervention acceptability that are most relevant to their intervention aims. However they should consider the evidence that “very frequent” contact is likely to be less acceptable to participants than lower frequency contact.

| 2. The control group was mentioned on line 75, but not described nor included in the rest of the manuscript. A change in fruit/vegetable consumption without the presence of an intervention would indicate that other confounding factors may play a role in this behavior. Or vice versa, the lack of change in F/V consumption behavior without the intervention would provide support for the effectiveness of this intervention in changing actual behaviors. Please explain the control group procedures and results. Did the control group receive any non-nutrition related emails? At what frequency? Explain how this group served as a control. Consider including this data in the analysis. |
|---|---|
| The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention. The results of both studies have been published elsewhere. The second of these studies included a control group (who received no intervention emails). However these participants did not complete any measure of intervention acceptability and so these participants were not included in the analyses reported in this manuscript. |

| 3. The focus of the manuscript was clearly on the factors of acceptability and their ratings, but correlations between these acceptability ratings and intervention effectiveness (behavior change) as well as individual characteristics (attitude and intention, etc.) were evaluated without providing these findings alone. What were the baseline characteristics in terms of behavior (especially as it relates to F/V consumption), intention, attitude, As outlined in the introduction, “the intervention … has previously been shown to be successful in bringing about increases in individual’s attitudes towards eating fruit and vegetables and in increasing the perceived social pressure to consume fruit and vegetables [7]”. As in response to the above comment, the acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention. The results of both studies have been published elsewhere. |

### Manuscript revision Lines 84-93

Participants were randomly assigned to one of three groups: (1) low-frequency intervention (2) high-frequency intervention or (3) control. The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention [7, 8]. The results of both studies have been published elsewhere [7, 8]. The second of these studies included a control group (who received no intervention emails). Participants randomised to that group did not complete any measure of intervention acceptability and so were not included in the analyses reported in this manuscript. As such, this study includes individuals randomised to either intervention condition in either of the Fresh Facts efficacy studies. Both studies were approved by the University Human Research Ethics Committee.

| 3. The focus of the manuscript was clearly on the factors of acceptability and their ratings, but correlations between these acceptability ratings and intervention effectiveness (behavior change) as well as individual characteristics (attitude and intention, etc.) were evaluated without providing these findings alone. What were the baseline characteristics in terms of behavior (especially as it relates to F/V consumption), intention, attitude, As outlined in the introduction, “the intervention … has previously been shown to be successful in bringing about increases in individual’s attitudes towards eating fruit and vegetables and in increasing the perceived social pressure to consume fruit and vegetables [7]”. As in response to the above comment, the acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention. The results of both studies have been published elsewhere. |
subjective norm, and planned behaviour change? What was the effect of the intervention on these characteristics? What was the effect of the intervention on fruit/vegetable consumption? Please report these findings. Readers will not be interested in the acceptability of an intervention that is not proven effective. Did this intervention effectively change fruit and vegetable consumption?

Manuscript revision Lines 87-88

The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention [7, 8]. The results of both studies have been published elsewhere [7, 8].

As outlined in the introduction, “the intervention … has previously been shown to be successful in bringing about increases in individual’s attitudes towards eating fruit and vegetables and in increasing the perceived social pressure to consume fruit and vegetables [7]”. The manuscript has now been amended to more clearly reference the relevant prior publications that sought to evaluate the efficacy of this intervention. We apologise that mention of the previous trials wasn’t clear enough in the previous version of the manuscript.

Manuscript revision Lines 87-88

The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention [7, 8]. The results of both studies have been published elsewhere [7, 8].

4. The methods section needs to be expanded greatly to include how all measures were assessed? F/V consumption, beliefs, intentions, attitudes, subjective norms, PBC, etc. Please include the assessment of each of these measures in the methods section.

a. Line 77: “Participants completed measures of fruit and vegetable intake (servings/day) and TPB variables…” Please expand upon this. How exactly was F/V intake measured? By weight? By food diary? By food frequency questionnaire? How

Thank you for this suggestion, additional information these measures has been added to the methods. We believe that the addition of this information about the methods greatly improves the readability of this paper.
were TPB variables assessed? Using a valid and reliable survey or index? Which one?

b. Lines 79-80: Please expand on the acceptability rating tool. Interesting, credible, logical, easy to understand, personally relevant, useful, complete, too long, and confusing are acceptability variables clearly related to the content. While “Too many emails” is the frequency variable. “Annoying” could be applied to frequency or content. Please explain the inclusion of these variables and explain the manner in which these were presented to the subjects.

**Manuscript revision: Lines 95-108**

Participants completed measures of fruit and vegetable intake (servings/day) and TPB variables (intention, subjective norm, perceived behavioural control and attitude) at baseline and immediately post-intervention.

TPB variables were measured using the same measure described in previous evaluations of the Fresh Facts intervention [8]. Intention, attitude, subjective norm and PBC were all assessed using a 100 point visual analogue scale (where higher scores indicated stronger/more positive levels of that construct). Internal consistency for the TPB measures was good (Cronbach’s alphas= .718 - .929).

As in evaluations of the efficacy of Fresh Facts [8], fruit and vegetable consumption was measured using a brief self-report measure of previous day consumption (e.g. *How many servings of fruit did you eat yesterday?*). Scores were summed to create a composite score of the previous day fruit and vegetable consumption.

Intervention acceptability was assessed using an established measure [11, 12] immediately post-intervention. This measure assessed participants beliefs about the intervention on a 6 point Likert scale (e.g. *I think the email messages were… interesting*: 1=strong disagree, 6=strongly agree). Intervention materials were delivered to the participant’s nominated email address on days 1-30.

5. Lines 156-157: “…threat to the dissemination of the intervention, since it would appear that the intervention is best received by those who have the least need for it.” I appreciate that this limitation was included in the discussion, but it reveals that data are being withheld from this manuscript. What was the limitation was included in the discussion, but it reveals that data are being withheld from this manuscript. What was the

The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention. The results of both studies have been published elsewhere. The manuscript has been amended to reference the relevant prior publications. We apologise that mention of the previous trials wasn’t clear enough in the
baseline F/V consumption, intention, attitude, PBC, etc.? How were these affected by the intervention? previous version of the manuscript.

**Manuscript revision Lines 87-88**

The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention [7, 8]. The results of both studies have been published elsewhere [7, 8].

<table>
<thead>
<tr>
<th>a. Line 72: Are these nutrition, exercise, or health-type students? What courses were these students recruited from?</th>
<th>The methods also now states that students were enrolled in an undergraduate psychology subject and that all study materials were completed online.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data were collected from undergraduate students enrolled in an introductory psychology course at an Australian University. Students received course credit for participation in the study. All aspects of the study occurred online and could be completed from any computer with internet access. Written informed consent for participation was obtained from all participants, who were all adults aged 18 years and older.</td>
<td>We do not believe that the recruitment procedure within the current study constitutes a risk of coercion or bias in the manner suggested here. Students enrolled in first year psychology have access to a website that lists all studies which are seeking first year students as participants. Students are able to sign-up to experiments in order to receive course credit. Undergraduate psychology students are eligible to complete up to 4 hours of research participation in order to earn course credit (up to 5% of the grade for the unit). In the semesters in which recruitment for this study occurred students were able to choose between over 200 studies (with some studies providing student the opportunity to earn all 4 hours within a single study). Students are also provided with the option to complete a piece of written work if they do not wish to participate in research. The researchers were not involved in teaching or marking within first year undergraduate units at the time the study was conducted and so were not in a position to influence student grades on the basis of participant responses.</td>
</tr>
<tr>
<td>The consent process for the study made it clear that the decision to participate in the study (or to participate and then withdraw from the study) would have no impact on the student’s relationship with the university or the researchers involved within the study.</td>
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</tbody>
</table>
### Reviewer #3

<table>
<thead>
<tr>
<th>Reviewer Comment</th>
<th>Author Response</th>
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</thead>
<tbody>
<tr>
<td>1. Intervention impact on fruit and vegetable intake. Determining the acceptability of an intervention is extremely important. Effectiveness on the targeted behavior, i.e. fruit and vegetable intake, is obviously of equal importance. This manuscript would be greatly strengthened by reporting the effect of the intervention on fruit/vegetable intake as well, even if the increase was not statistically significant. If the results of this are published elsewhere they are not referred to in the manuscript. In the abstract it states that acceptability was associated with intervention “success” – but the success is never defined (line 36). In the abstract, line 40, it states that results support ongoing use of email-based intervention to target fruit and vegetable consumption – this is not quite a valid statement without also showing the intervention had some impact on consumption rather than just being acceptable. I suggest adding this critical information to all aspects of the manuscript from abstract to methods to discussion.</td>
<td>As stated in the introduction: “The intervention is based on the theory of planned behaviour [TPB; 9, 10] and has previously been shown to be successful in bringing about increases in individual’s attitudes towards eating fruit and vegetables and in increasing the perceived social pressure to consume fruit and vegetables [7].” The manuscript has been amended to more clearly reference the relevant prior publications that have evaluated the efficacy of this intervention.</td>
</tr>
<tr>
<td>The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention [7, 8]. The results of both studies have been published elsewhere [7, 8].</td>
<td></td>
</tr>
<tr>
<td>2. Randomization. Participants were randomized yet there is a large difference between the numbers of participants in each group (102 versus 173). Please explain the randomization process. Were participants stratified by gender or any other characteristics? Given the size difference of the two groups, please edit Table 3. Demographic Characteristics, to report these characteristics by group and conduct statistical tests to determine if there are any differences between the two intervention groups by these characteristics.</td>
<td>The acceptability data included in this manuscript was drawn from two studies that evaluated the efficacy of the Fresh Facts intervention. The results of both studies have been published elsewhere. The second of these studies included a control group (who received no intervention emails). However these participants did not complete any measure of intervention acceptability and so these participants were not included in the analyses reported in this manuscript. The manuscript has been amended to reference the relevant prior publications and to explain the rationale for excluding the control group from the present analyses. We apologise that the previous version of the manuscript was unclear</td>
</tr>
</tbody>
</table>
in this regard.

Table 3 now includes the demographic characteristics of the two intervention groups separately as well as the results of statistical tests for between group differences in these characteristics.

Manuscript revision Lines 84-93

Participants were randomly assigned to one of three groups: (1) low-frequency intervention (2) high-frequency intervention or (3) control. The acceptability data included in this manuscript was drawn from two studies that sought to assess the efficacy of the Fresh Facts intervention [7, 8]. The results of both studies have been published elsewhere [7, 8]. The second of these studies included a control group (who received no intervention emails). Participants randomised to that group did not complete any measure of intervention acceptability and so were not included in the analyses reported in this manuscript. As such, this study includes individuals randomised to either intervention condition in either of the Fresh Facts efficacy studies. Both studies were approved by the University Human Research Ethics Committee.

See also: Table 3

3. Methods. The methods section is very brief and would benefit from added details. Specifically, it states that participants completed measures of fruit and vegetable intake and TPB variables. Please detail if participants completed a FFQ and if so which one or a 24 hour recall, etc. How were the TPB variables measured? A valid questionnaire? A reference is provided for the intervention acceptability assessment, but a very brief description is still necessary. For instance was this a Likert scale, what were the range of choices, etc.

Also in general - were these all completed on paper in person or online? When and where were they completed? In class? Were all students from the same class and were they health majors? Who administered the questionnaires, etc.

Similarly, the intervention description outlines the frequency of messages but gives no description of the type of messages. If space is available providing a sample of messages would be ideal. Were there

Three sets of changes have been made in response to this comment.

1. Additional information about the fruit and vegetable measure, the TPB measures, and the acceptability questionnaire have been added to the methods.

2. The methods also now states that students were enrolled in an undergraduate psychology subject and that all study materials were completed online.

3. Thank you for this suggestion. Having re-read the document we agree that the description of the intervention was lacking. We have expanded this description by creating an additional table (table 2) that provides examples of how each construct was targeted within Fresh Facts and example intervention text targeting each construct. We hope that this assists the reviewer (and future readers) in gaining a “sense of the intervention”.
so many questions designed specifically to target the TPB variables? Were recipes provided? The reader does not have a sense of the intervention other than it was messages about fruits and vegetables.

**Manuscript revision: Lines 95-108 (Response Part 1)**

Participants completed measures of fruit and vegetable intake (servings/day) and TPB variables (intention, subjective norm, perceived behavioural control and attitude) at baseline and immediately post-intervention.

TPB variables were measured using the same measure described in previous evaluations of the Fresh Facts intervention [8]. Intention, attitude, subjective norm and PBC were all assessed using a 100 point visual analogue scale (where higher scores indicated stronger/more positive levels of that construct). Internal consistency for the TPB measures was good (Cronbach’s alphas= .718 - .929).

As in evaluations of the efficacy of Fresh Facts [8], fruit and vegetable consumption was measured using a brief self-report measure of previous day consumption (e.g. *How many servings of fruit did you eat yesterday?*). Scores were summed to create a composite score of the previous day fruit and vegetable consumption.

Intervention acceptability was assessed using an established measure [11, 12] immediately post-intervention. This measure assessed participants beliefs about the intervention on a 6 point Likert scale (e.g. *I think the email messages were... interesting:* 1=strong disagree, 6=strongly agree). Intervention materials were delivered to the participant’s nominated email address on days 1-30.

**Manuscript revision Lines 78-82 (Response Part 2)**

Data were collected from undergraduate students enrolled in an introductory psychology course at an Australian University. Students received course credit for participation in the study. All aspects of the study occurred online and could be completed from any computer with internet access. Written informed consent for participation was obtained from all participants, who were all adults aged 18 years and older.

**See also: Table 2 (Response Part 3)**

4. Attrition. The overall rate of non-completers is stated as 21% on line 96. Please detail if there were differences between high and low frequency groups. The reader is referred to table 2 on line 96 for more information about attrition, but this information does not appear on table 2 or any other table. Please correct. I believe the authors meant
for line 96 to refer to table 3.

**See Table 3.**

<table>
<thead>
<tr>
<th>5. Limitations. No limitations were identified by the authors. Please add to discussion.</th>
<th>A limitation section is now included in the discussion.</th>
</tr>
</thead>
</table>

**Manuscript revision: Lines 99-108**

**Strengths and limitations of the present study**

In addition to the issues discussed above, there are a number of factors that should be taken into account when interpreting these results. Firstly, the results presented here consider the feasibility of the Fresh Facts intervention only in the context of university undergraduate students. While the use of a study population that closely matched to the target population of the intervention is appropriate to the evaluation of the intervention itself – this limits the extent to which relationships reported in this study would be generalizable to other populations. As such, readers should be cautious when seeking to apply the results of this study to other contexts.

This study contributes to a small, but growing, literature on the acceptability of behaviour change interventions. The consideration of the relationship between participant and intervention characteristics, attrition, effectiveness, and intervention acceptability is a relatively new advance within this context and is a strength of this stage of Fresh Facts evaluation. These analyses not only provide valuable information about the acceptability of Fresh Facts but also provide important data about potential threats intervention dissemination that may also be relevant for other intervention programmes.

| Line 94 – the percentage of females given here (77.3%) is not the same as that given on table 2. | This has been corrected. Thank you. |
| Line 98 – was the rating of “too long” referring to the messages or the entire intervention? | Additional information has been added to the method section to more clearly describe the acceptability items. The full text of this item is: “I think the email messages were: too long… (strongly disagree – strongly agree)” |

**Manuscript revision: Lines 99-108**

Intervention acceptability was assessed using an established measure [11, 12] immediately post-intervention. This measure assessed participants beliefs about the intervention on a 6 point Likert scale (e.g. *I think the email messages were… interesting*: 1=strong disagree, 6=strongly agree).

<table>
<thead>
<tr>
<th>Intervention materials were delivered to the participant’s nominated email address on days 1-30.</th>
</tr>
</thead>
</table>

| Line 102 – Differences in attrition again referred to (now as table 3) but this is not on table 3. | Thank you very much for your attention to detail. Attrition has been added to Table 3. |
| Line 114 – fruit and vegetable consumption at baseline referred to, but | Thank you very much for your attention to detail. This information has |
never given at any timepoint. 

**Table 1** has been added to Table 1.

Line 121 – PBC should be spelled out at first mention with acronym given in line 117.

Thank you very much for your attention to detail. PBC is now spelled out in full within the text. The acronym is used (and defined) in relevant tables.

Line 171 – refers to “…in other studies” but only one reference given. Either add more references to rewrite to refer to one particular study.

This sentence has been reworded to refer to the single study referenced.

**Manuscript revision: Lines 236-237**

*Given similar links have been observed in at least one other study [18]*

Table 1 – there are two Table 1s. Change second to Table 2. Then on Table 2, suggest editing title to read “Demographic characteristics of participants by randomization assignment” – and here compare by group rather than lumping all together given the difference in number assigned to each group.

This table (now Table 3) has been renamed and now includes the demographic characteristics of the two intervention groups separately.

Table 3 – Attrition missing from title and table but referred to in text. Need to report attrition by group.

Also please briefly describe scale here and/or in text. Is this a scale of 1-5, 1-10?

Three sets of changes have been made in response to this comment.

(A) Attrition has been added to Table 3.

(B) Additional information about the scale used in acceptability ratings is now included in the methods section.

(C) The totals column has been deleted from this table as suggested.

**See Table 3 (Response Part 1)**

**Manuscript revision: Lines 95-108 (Response Part 2)**

Intervention acceptability was assessed using an established measure [11, 12] immediately post-intervention. This measure assessed participants beliefs about the intervention on a 6 point Likert scale (e.g. *I think the email messages were... interesting:* 1=strong disagree, 6=strongly agree).

Intervention materials were delivered to the participant’s nominated email address on days 1-30.

**See Table 4 (Response Part 3)**

Tables 4 and 5 – have the exact same title. Please correct the title on The title for this table has been corrected. The correct title for this
Table 5

| Pearson Correlations between change in beliefs about fruit and vegetable and intervention acceptability ratings |