

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Participant experiences of two successful habit-based weight loss interventions in Australia: a qualitative study
AUTHORS	Cleo, Gina; Hersch, Jolyn; Thomas, Rae

VERSION 1 – REVIEW

REVIEWER	Jason Tang University of Dundee, Scotland
REVIEW RETURNED	04-Nov-2017

GENERAL COMMENTS	<p>I enjoyed reading this paper. The authors report clearly and with details the data analysis, which makes it easy for the reader to understand how they perceived and developed their understanding of the data. To help readers understand the findings better, it could be useful if authors report some more information on the following:</p> <p>(1) Were there any theoretical underpinning(s) that guided the interpretation of the data (e.g. was this a theory informed analysis?)</p> <p>(2) What was the initial number of participants approached, numbers of non-participation and (if available) reasons for non-participation.</p> <p>(3) Did the authors include field notes including contextual information and non-verbal expression - and if so, whether and how they were included in the analysis.</p> <p>(4) Please specify the mode of delivery used as this is likely to have an effect on engagement – did users discuss whether they accessed the intervention by computer, smartphone, tablets (or a combination of different modes). Smartphones offer on-to-go access so could be more appealing.</p> <p>(5) Why was the qualitative interview method chosen in preference to some sort of thinking aloud procedure where users interact with the intervention and describe what they are thinking?</p> <p>(6) Participants were aged 39-69 years. Do you perceive of any differences in responses among the younger population?</p> <p>(7) Can the authors specify how they developed the topic guide? Any frameworks used?</p> <p>(8) Was any software used during the process of analysis?</p> <p>(9) Were the weight loss findings from the randomised controlled trial clinically significant? Please report the amount of weight loss so</p>
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	<p>that readers can interpret the findings along with the randomised controlled trial study.</p> <p>(10) How important were the weekly phone calls on adherence and behaviour change? If the two programs were delivered without professional contact (i.e. self-directed) would they achieve similar results?</p> <p>(11) Line 289 is unclear. Please rephrase.</p>
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REVIEWER	Rebecca Beeken University of Leeds, UK
REVIEW RETURNED	27-Nov-2017

GENERAL COMMENTS	<p>This paper describes a qualitative study exploring the experiences of two habit-based weight loss interventions. Overall, it is very well-written and has been reported appropriately, with the COREQ checklist completed and included as supplementary material. I have the following comments, which I hope are helpful:</p> <ol style="list-style-type: none"> 1. I feel the setting for the study might be more meaningful if it indicated where participants were recruited from. Stating it is a University might suggest participants were students/academics. 2. Typo page 3, line 61: 'our RCT' 3. A strength of this study is the insight it gives into how/why habit-based interventions might work (and perhaps the different ways the two approaches work?). I would consider including this within the strengths/limitations section and/or adding some of these insights to the 'what this study adds' section. I think this data is more novel than stating that these kinds of interventions are practical and convenient to implement and maintain. What does this study add over what Lally, Wardle & Gardner found in their qualitative study of a habit-based weight loss intervention? This could perhaps be emphasized more throughout the manuscript. 4. In the strengths and limitations sections I don't think the authors can state with certainty that the potential bias created through the researcher conducting the interviews being the same researcher who led the programs has been addressed. It might be more accurate to state that they attempted to address this (as they do in the discussion) 5. Line 91, page 5: Please include references for the two interventions 6. While Ten Top Tips promotes habit formation, if I have understood correctly, DSD is focused on breaking habits. Could the authors add to the introduction detail on how these two approaches, while both focused on habits, help to encourage maintenance of behaviours in different ways (i.e. TTT encourages formation and maintenance of new healthy habits whereas DSD encourages participants to break and maintain cessation of unhealthy habits)? I'm not sure the distinction is entirely clear at the moment. 7. Within the description of the interventions, I would emphasise that for TTT a key component is repeating the behaviours in a consistent context. If the logbook was the same as that used within the 10TT trial in primary care, I would reference this.
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	<p>8. Line 196-197, page 10: Referencing error</p> <p>9. Given the inclusion of individuals who did more/less well with the interventions, this seems an ideal opportunity to explore what differed between participants that gained weight (or lost less weight) compared those who lost a lot of weight? Did the data suggest any key differences or did they report similar experiences despite the differences in weight loss? A little more detail on the nuances within the data would be really valuable (if available).</p> <p>10. Some of the discussion of the results in the context of the wider literature might be better in the discussion rather than in the results themselves (e.g. lines 318-323 page 16). Perhaps consider moving comments such as these to the discussion and focus the results on the data. On a related note it is unclear if some points have come from the data or the authors (e.g. line 328 -329 page 16).</p> <p>11. Lines 404-406 page 19: Please add references for this.</p> <p>12. The discussion on accountability is important, particularly given TTT at least is designed to be a 'one-off' intervention. Some discussion of this and how future research might better unpick if it is the accountability/ the habit approach / both that are essential components of these interventions would be good to include.</p> <p>13. The discussion on the differences between the two interventions is really interesting and further discussion of the implications of these would be valuable. I don't think the differences should be lost sight of in the overall conclusions/considerations for future interventions..</p>
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REVIEWER	Dr Phillippa Lally UCL, UK
REVIEW RETURNED	06-Dec-2017

GENERAL COMMENTS	<p>In this paper this, two interventions are considered “habit based interventions” and participants from both are included in the analysis. Broadly this definition is not inaccurate however the two approaches are polar opposites, one recommends creating routines in order to develop habits for making healthy choices (TTT), the other aims to break routines and enable flexibility in choices (DSD). The Ten Top Tips is a based on habit formation for healthy behaviours and recommends developing routines in order to create habits. The Do Something Different Programme is designed to increase behavioural flexibility, ie. to make people’s lives less routine and habitual. The aim is to break habits that support unhealthy behaviours and hence relate to weight gain or maintenance. Although we have published a paper using qualitative analysis to examine the experiences of participants using the Ten Top Tips Programme, the intervention was delivered in a more intensive way here and a study of this kind could therefore add sometime. The findings relating to the impact of accountability is interesting, and the idea that after habits are established this is no longer required is potentially useful to consider in intervention designs. Similarly there are many interesting questions to be asked about how the DSD programme works for people in their lives. Can participants identify habits that they have “broken” and do they then make various choices in different situations or have they formed any new habits. Did the new behaviours they are asked to perform result</p>
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	<p>in them no longer encountering the cues to unhealthy habits or are there other mechanisms that are the reason the new behaviours result in weight loss. Unfortunately this paper does not answer these questions and possibly because the analysis is conducted across these two interventions.</p> <p>The conclusions in the abstract and "what this study adds" relate to the quantitative outcomes of the research, presented elsewhere, as much as the qualitative results presented in this paper. They need to focus on what this qualitative analysis has added.</p> <p>I would be interested in reading a qualitative paper among people who participated in either of these interventions but I do not think it is appropriate to analyse across the two.</p>
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VERSION 1 – AUTHOR RESPONSE

Editorial Requests:

1. COMMENT: Please revise your title so that it includes your study setting. This is the preferred format for the journal.

CHANGE: We thank the editor for this comment and have changed title to: 'Participant experiences of two successful habit-based weight loss interventions in Australia: a qualitative study'.

2. COMMENT: Please remove the 'what this study adds' and 'what is already known' sections (these are not journal requirements).

CHANGE: 'What this study adds' and 'what is already known' have been removed.

3. COMMENT: Page 6, line 110: are the results of your RCT now published? If so then please update the manuscript. Can you also include the clinical trial registry details?

RESPONSE: The RCT paper is with the publishing journal for a second review, however is yet to be published. Should the status of the RCT publication change, we will notify BMJ Open immediately.

CHANGE: The trial registry details have been added to line 116.

4. COMMENT: Do any of the authors have any affiliation to the weight loss programmes described e.g. do the authors receive any money from them? If so then this should be declared in the competing interests section.

RESPONSE: The authors have no affiliation to either Ten Top Tips (TTT) or Do Something Different (DSD) and do not receive any money from them. The authors declare no competing interests.

Reviewers' Comments to Author:

Reviewer: 1

Reviewer Name: Jason Tang

Institution and Country: University of Dundee, Scotland

Competing Interests: None declared

5. COMMENT: I enjoyed reading this paper. The authors report clearly and with details the data analysis, which makes it easy for the reader to understand how they perceived and developed their understanding of the data. To help readers understand the findings better, it could be useful if authors report some more information on the following:

Were there any theoretical underpinning(s) that guided the interpretation of the data (e.g. was this a theory informed analysis?)

RESPONSE: We thank the reviewer for his kind comments and are glad the paper was enjoyable to read. There were no specific theoretical underpinning(s) that guided the interpretation of the data. We used a phenomenology approach to understand the constructs, concepts or ideas the participants use

in everyday life to make sense of their world (lines 180-182). We also used an inductive approach to draw codes, categories or themes from the data (lines 182-184).

6. COMMENT: What was the initial number of participants approached, numbers of non-participation and (if available) reasons for non-participation.

RESPONSE: Please see lines 204-207 under 'Participant characteristics', which states: "Of the 16 potential participants invited to join the qualitative study, one was unable to participate due to unrelated ill health and hospitalisation (TTT group). Fifteen participants (8 men, 7 women), aged 39-69 years (Mean 53.3 years, SD 10.3) were recruited and interviewed."

7. COMMENT: Did the authors include field notes including contextual information and non-verbal expression - and if so, whether and how they were included in the analysis.

RESPONSE: The interviews were audio-recorded and transcribed verbatim; however, no notes were taken during the interview so as to not distract the interviewee as well as to maintain an easy flow of conversation and casual atmosphere to the session. Non-verbal expressions were not included in the analysis.

CHANGE: We have now specified this on lines 174-176.

8. COMMENT: Please specify the mode of delivery used as this is likely to have an effect on engagement- did users discuss whether they accessed the intervention by computer, smartphone, tablets (or a combination of different modes). Smartphones offer on-to-go access so could be more appealing.

RESPONSE: Please refer to lines 128 and 140 which state TTT was delivered using written materials (booklet) and DSD delivered via text message and/or email. We did not collect data on how the participants accessed the interventions; however, during the weekly phone calls participants received during the active phase of the interventions, DSD participants reported using computer (email) and/or phone (text message) to receive the intervention. TTT participants only had written materials.

9. COMMENT Why was the qualitative interview method chosen in preference to some sort of thinking aloud procedure where users interact with the intervention and describe what they are thinking?

RESPONSE: This would be an interesting idea for future studies but unfortunately was not practicable for these interventions. The interventions were habit-based and focused on long-term change, therefore we wanted to use qualitative interviews to assess participants' reflections on the interventions after a 6-month time-frame. Moreover, the interventions were designed to be implemented throughout the participants day - for example, the 10 tips in TTT were designed to be triggered by contextual cues in the participants day/current lifestyle and the tasks in DSD were randomly sent 3-4 days per week and personalised to the individual. Therefore, collecting study data while participants were in the midst of interacting with the interventions was not feasible. Future studies using a think aloud method would however be interesting.

10. COMMENT: Participants were aged 39-69 years. Do you perceive of any differences in responses among the younger population?

RESPONSE: This may be of interest as a separate analysis however due to our small sample size (n= 15) we were not able to analyse such factors. Further analyses investigating age group differences would be valuable and we will certainly consider it in future research.

11. COMMENT: Can the authors specify how they developed the topic guide? Any frameworks used?

RESPONSE: Although no specific frameworks were used to develop the interview, we have outlined how the interview schedule and procedure was developed on lines 163-166 under 'Interview schedule and procedure'.

12. COMMENT: Was any software used during the process of analysis?
 CHANGE: We have added on line 185-186: Interview audio-recordings were transcribed in encrypted Microsoft Word documents and qualitative data were extracted to Microsoft Excel.

13. COMMENT: Were the weight loss findings from the randomised controlled trial clinically significant? Please report the amount of weight loss so that readers can interpret the findings along with the randomised controlled trial study.
 CHANGE: Although we stated the weight loss from the RCT was clinically significant in the introduction, discussion and conclusion, we agree, adding some statistics would be helpful for interpretation. We included the adjusted mean weight difference between the interventions and the associated P-values on lines 95-96 as well as the total mean weight change on lines 97-98.

14. COMMENT: How important were the weekly phone calls on adherence and behaviour change? If the two programs were delivered without professional contact (i.e. self-directed) would they achieve similar results?
 RESPONSE: We discuss this in detail in the RCT paper (presently under review): To aid in study retention and to increase accountability, we included weekly check-in phone calls for the 12-week intervention period. These phone calls were not in the original designs of either TTT or DSD. We hypothesized this difference would achieve greater weight loss than previous TTT and DSD trials. This appeared to be the case for TTT, but did not apply for DSD. We conclude that weekly monitoring did not achieve greater weight-loss results however could have improved retention. Whether weekly monitoring influenced retention requires further research.
 CHANGE: please see lines 443-444: "We hypothesize that weekly monitoring may have improved retention, however, further research is required to make such conclusions.

15. COMMENT: Line 289 is unclear. Please rephrase.
 CHANGE: We have rephrased this line which can now be found on lines 301-303: "A major theme that emerged was the participants' sense of accountability throughout the active intervention period; this included accountability to the researcher, the study, and in the TTT group, to the logbook."

Reviewer: 2
 Reviewer Name: Rebecca Beeken
 Institution and Country: University of Leeds, UK
 Competing Interests: I am currently working with the authors on an unrelated project.

16. COMMENT: This paper describes a qualitative study exploring the experiences of two habit-based weight loss interventions. Overall, it is very well-written and has been reported appropriately, with the COREQ checklist completed and included as supplementary material. I have the following comments, which I hope are helpful:
 I feel the setting for the study might be more meaningful if it indicated where participants were recruited from. Stating it is a University might suggest participants were students/academics.
 CHANGE: We thank the reviewer for her kind words. We have changed the setting to state: "Participants from the community were interviewed at Bond University, Australia" (line 36). Also, on lines 116-117, we added "Participants were recruited via local televised news and radio interviews and were eligible if...."

17. COMMENT: Typo page 3, line 61: 'our RCT'
 CHANGE: We apologise for the typo and have amended (line 60) as per comment.

18. COMMENT: A strength of this study is the insight it gives into how/why habit-based interventions might work (and perhaps the different ways the two approaches work?). I would consider including this within the strengths/limitations section and/or adding some of these insights to the 'what this study adds' section. I think this data is more novel than stating that these kinds of interventions are practical and convenient to implement and maintain. What does this study add over what Lally, Wardle & Gardner found in their qualitative study of a habit-based weight loss intervention? This could perhaps be emphasized more throughout the manuscript.

CHANGE: Thank you, that is a helpful comment. We have added lines 469-473 to the manuscript and amended the strengths and limitations section on page 3 to reflect the reviewer's comment.

Lines 469-473 now read: "This study offers insight into why habit-based interventions might work and builds on previous research. The findings generated some practical recommendations for effective promotion of healthy habits and weight loss maintenance; for example: recommending small changes, the importance of external accountability and the lack of need for restrictive diet regimens."

The additional point in the Strengths and limitations section, reads: "This study offers insight into how and why habit-based interventions work" (line 57).

19. COMMENT: In the strengths and limitations sections I don't think the authors can state with certainty that the potential bias created through the researcher conducting the interviews being the same researcher who led the programs has been addressed. It might be more accurate to state that they attempted to address this (as they do in the discussion).

CHANGE: We agree with this comment and have made the appropriate amendments to the strength and limitations section.

20. COMMENT: Line 91, page 5: Please include references for the two interventions

CHANGE: References have been included for the two interventions (page 6, line 94).

21. COMMENT: While Ten Top Tips promotes habit formation, if I have understood correctly, DSD is focused on breaking habits. Could the authors add to the introduction detail on how these two approaches, while both focused on habits, help to encourage maintenance of behaviours in different ways (i.e. TTT encourages formation and maintenance of new healthy habits whereas DSD encourages participants to break and maintain cessation of unhealthy habits)? I'm not sure the distinction is entirely clear at the moment.

CHANGE: We thank the reviewer for this important comment and have added to the introduction an explanation on the link between breaking habits and maintaining the cessation of unhealthy habits (lines 82-85): "Furthermore, breaking habits increases an individual's mindful actions as they engage in conscious and purposeful thought. Mindfulness is suggested to draw attention to the behaviour, making it easier to recognise compliance with health-related goals and disengage from inimical habits."

22. COMMENT: Within the description of the interventions, I would emphasise that for TTT a key component is repeating the behaviours in a consistent context. If the logbook was the same as that used within the 10TT trial in primary care, I would reference this.

CHANGE: On line 132 we added that repeating the behaviour in a consistent context was a key component and referenced the 10TT trial in primary care.

23. COMMENT: Line 196-197, page 10: Referencing error

CHANGE: Reference corrected (now line 209).

24. COMMENT: Given the inclusion of individuals who did more/less well with the interventions, this seems an ideal opportunity to explore what differed between participants that gained weight (or lost less weight) compared those who lost a lot of weight? Did the data suggest any key differences or

did they report similar experiences despite the differences in weight loss? A little more detail on the nuances within the data would be really valuable (if available).

RESPONSE: Interestingly, participants in this interview study reported similar experiences on the two programmes, despite the differences in weight loss between individuals. The 1 participant who gained weight on the program, gained weight due to an emerging health problem (line 428-430) nonetheless, the data did not suggest any key differences in their responses. Future research could perhaps provide an interesting exploration of what differed between participants with varied weight changes.

25. COMMENT: Some of the discussion of the results in the context of the wider literature might be better in the discussion rather than in the results themselves (e.g. lines 318-323 page 16). Perhaps consider moving comments such as these to the discussion and focus the results on the data. On a related note it is unclear if some points have come from the data or the authors (e.g. line 328 -329 page 16).

RESPONSE: We have considered some of the discussion points in the results, however, we believe they make it easier for the reader to put the data into context with the wider literature. However, we acknowledge this is not how a standard results section is written and would be more than happy to amend should the editor wish.

CHANGE: We added: "according to participant reports", on lines 342-343 to make the data source clearer.

26. COMMENT: Lines 404-406 page 19: Please add references for this.

CHANGE: References have been added as per comment (now lines 420-421, page 20).

27. COMMENT: The discussion on accountability is important, particularly given TTT at least is designed to be a 'one-off' intervention. Some discussion of this and how future research might better unpick if it is the accountability/ the habit approach / both that are essential components of these interventions would be good to include.

CHANGE: (Response as per comment 14). We have added on lines 443-444: "We hypothesize that weekly monitoring may have improved retention, however, further research is required to make such conclusions." A trial which includes different methods of contact compared with no contact, as an example, could help identify if and how much accountability plays a role in the weight-loss outcomes of habit-based interventions.

28. COMMENT: The discussion on the differences between the two interventions is really interesting and further discussion of the implications of these would be valuable. I don't think the differences should be lost sight of in the overall conclusions/considerations for future interventions.

RESPONSE: The 'Intervention comparison' section in the discussion (lines 447-466) details the differences between the two interventions. Because the weight loss outcomes of both TTT and DSD were similar (difference was not statistically significant), and because participants reported an overall acceptance and enjoyment of both interventions, we do not think it is essential to separate the two mechanisms when considering future interventions. In fact, we believe each of the considerations for future interventions highlighted on lines 511-518 can and should be implemented with either forming new habits or breaking old ones.

Reviewer: 3

Reviewer Name: Dr Phillippa Lally

Institution and Country: UCL, UK

Competing Interests: None declared

29. COMMENT: In this paper the two interventions are considered "habit based interventions" and participants from both are included in the analysis. Broadly this definition is not inaccurate

however the two approaches are polar opposites, one recommends creating routines in order to develop habits for making healthy choices (TTT), the other aims to break routines and enable flexibility in choices (DSD). The Ten Top Tips is based on habit formation for healthy behaviours and recommends developing routines in order to create habits. The Do Something Different Programme is designed to increase behavioural flexibility, ie. to make people's lives less routine and habitual. The aim is to break habits that support unhealthy behaviours and hence relate to weight gain or maintenance.

Although we have published a paper using qualitative analysis to examine the experiences of participants using the Ten Top Tips Programme, the intervention was delivered in a more intensive way here and a study of this kind could therefore add something. The findings relating to the impact of accountability is interesting, and the idea that after habits are established this is no longer required is potentially useful to consider in intervention designs.

RESPONSE: We thank the reviewer for her thoughtful comment.

30. COMMENT: Similarly, there are many interesting questions to be asked about how the DSD programme works for people in their lives. Can participants identify habits that they have "broken" and do they then make various choices in different situations or have they formed any new habits. Did the new behaviours they are asked to perform result in them no longer encountering the cues to unhealthy habits or are there other mechanisms that are the reason the new behaviours result in weight loss. Unfortunately, this paper does not answer these questions and possibly because the analysis is conducted across these two interventions.

RESPONSE: We agree that further research to unpack these points is important. Our primary goal of this paper was to explore the general experience of participants who had completed TTT and DSD. Our RCT (under review) showed no difference in weight loss between the two interventions at 12 weeks but both differed significantly from control. The interviews for this manuscript were conducted at 6 months post-intervention and designed as both a check-in and to explore whether and how the interventions affected the participants' lifestyle post-intervention. As per response to comment 21, we have included on lines 82-85 further explanation on the link between breaking habits and behaviour change. As this was a qualitative analysis to consider the participants' views regarding the acceptability and practical application of the interventions, we did not assess the mechanisms with which the interventions used.

31. COMMENT: The conclusions in the abstract and "what this study adds" relate to the quantitative outcomes of the research, presented elsewhere, as much as the qualitative results presented in this paper. They need to focus on what this qualitative analysis has added.

CHANGE: We agree and have changed the abstract conclusion to reflect the same (lines 51-54).

32. COMMENT: I would be interested in reading a qualitative paper among people who participated in either of these interventions but I do not think it is appropriate to analyse across the two.

RESPONSE: If the goal of the paper was to differentiate between the two interventions, this would be important. However, the goal of our large trial was to determine if habit-based interventions were effective at reducing weight at post intervention and maintaining that weight loss. Both habit-based groups achieved significant weight loss at 12-week completion and were not statistically different. Therefore, we felt that analysing the themes separately (for our goal) was not the correct approach. Each participant was interviewed individually and we have highlighted in the results which group the respondent was a part of; however, the themes were analysed across groups and a comparison of the two outlined on lines 447-466. Although a qualitative paper among participants in each of the interventions would be interesting, this was not the aim of this study.

VERSION 2 – REVIEW

REVIEWER	Dr Phillippa Lally UCL, UK
REVIEW RETURNED	29-Jan-2018

GENERAL COMMENTS	<p>When I first reviewed this paper I argued that it was inappropriate to conduct a qualitative analysis across participants who participated in two interventions which are designed to operate in completely different ways. The authors have chosen to leave the analysis as it was and I still believe this to be a mistake. The authors argue that a separate analysis was not necessary to answer their research questions. However their stated objectives were to explore the experience of participants who used the interventions, discover how their lifestyles changed and consider the acceptability of the interventions. All three of these areas could be expected to be different in the two interventions. If the analyses were performed separately and similar themes emerged then that is an interesting finding but focusing on finding shared themes across the two means important aspects of the change process could be missed within one group or the other. The authors have added a claim that the paper offers insight into how and why habit-based interventions might work. It does not do this because how these two interventions work is likely to be very different and analysing across the two masks any potential insight into the mechanisms that may be operating. A detailed analysis of how DSD participants changed their behaviours, how this disrupted established habits and whether they developed new habits or became more flexible in their behaviours would be very interesting. I hope the authors will consider re-running the analysis separately for the two intervention groups as I think this could make an important contribution to the field.</p>
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REVIEWER	Rebecca Beeken University of Leeds, UK
REVIEW RETURNED	05-Feb-2018

GENERAL COMMENTS	<p>The authors have done a good job of addressing most of the comments raised in my previous review. I think the distinction between the approaches of the 2 programs could still be a little clearer in the introduction. I.e. When targeting habits you can either seek to help participants form new healthy habits (as in 10TT) through advice on context-specific repetition and/or seek to help participants break unhealthy habits (as in DSD) through enhancing mindfulness. Although both are about habits, they are quite different and this should be clearly acknowledged. Similarly in terms of the framing of results/discussion, it is perhaps interesting/worth highlighting that despite these differences they were viewed similarly and the commonalities between the 2 are that they are both novel and different to standard approaches, as well as being easy to implement. The issue of accountability is potentially not unique to these approaches but is still valued. While the weight loss achieved through the 2 approaches was similar, this should not discount the fact that they are still very different programmes, and it is therefore of interest that they are viewed similarly, and different themes did not emerge.</p> <p>It would also be helpful if the authors could clearly state what the previous qual study of the TTT found and make a direct comparison- perhaps highlighting that the current study also looked at</p>
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	<p>experiences of an approach that focused on breaking habits as opposed to just forming habits.</p> <p>One other minor comment, in the abstract, it is perhaps too strong to state 'Habit-based weight loss interventions have shown significant weight loss results and superior long-term weight loss maintenance compared with most diet and exercise interventions.' There is a paucity of studies directly comparing the long-term maintenance achieved using the habit approach compared other approaches, so I would perhaps tone this down. I would also remove 'when compared with conventional lifestyle programs' from the conclusions, as this was not done in this study.</p> <p>I will leave the layout of the results section to the editor's discretion as suggested by the authors in their response.</p>
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VERSION 2 – AUTHOR RESPONSE

Editorial Comments and Requests:

1. COMMENT: Please note that we normally allow a maximum of two manuscript revisions. As such, we urge you to make all the necessary revisions at this stage in an effort to convince the reviewers and editorial team that your work is suitable for publication in BMJ Open.

RESPONSE: We have endeavoured to make every effort to address each comment as set out by the reviewers and hope our revisions satisfy the reviewers and editorial team.

2. COMMENT: Please remove reference 10. If your clinical trial results have not been published yet then please do not include it as a reference. Alternatively, you could deposit the clinical trial paper as a pre-print and refer to the pre-print in this paper.

RESPONSE: We received notification recently (14th February 2018) that our clinical trial results have been accepted for publication in the International Journal of Obesity. We hope a DOI will be available for reference by the end of March 2018.

3. COMMENT: Contrary to reviewer 1, please do not discuss the results of your clinical trial (reference 10) in this manuscript (lines 95-99). Readers cannot interpret these findings without having full access to the manuscript reporting the clinical trial results. You have also previously confirmed that this paper has not been published yet.

RESPONSE: Our manuscript was accepted by the International Journal of Obesity on the 14th of February 2018. We will make the DOI available to BMJ Open as soon as it is released to us.

4. COMMENT: We agree with reviewer 2 that some sentences/ paragraphs in the results section are not appropriate here and instead should be included in the discussion. Can you please reformat these two sections so that you are only reporting the results of your data in the results section? You can place the results in their wider context in the discussion section.

CHANGE: Accordingly, we have reformatted the paragraphs in the results section and merged the commentary to the discussion section.

5. COMMENT: We appreciate that reviewer 3's comments are still quite negative. We suggest that you accommodate this reviewer's suggestions. Whilst you have reported that both interventions achieved significant weight loss at 12-week completion, we do not think that it necessarily follows that the qualitative data should be analysed across both interventions. As this reviewer points out, some important differences could be missed this way. If you decide not to follow this reviewer's suggestion then you would need to provide a stronger rationale for not doing so. For example, do the same themes emerge from the qualitative data if you analyse the interventions separately? You would also need to discuss the potential limitations of your approach in the manuscript if you do not follow reviewer 3's suggestions.

RESPONSE: We thank the editor for their comment and have clarified in our responses to the reviewer 3 and in our manuscript. We have strengthened the justification for combining the findings across the two interventions and have addressed this for multiple reviewer comments. We recruited evenly from the two interventions (although one person dropped out of the TTT group). We were expecting different themes to emerge from the data, especially considering the interventions were different. However, despite analysing the participants' responses in each intervention group separately, similarities emerged from the data which resulted in common themes across the two interventions. We combined the similarities and highlighted the differences throughout the results section. We have clarified this to Reviewer 3. Please also see our responses to the comments numbered 7, 12, 13 and 14 below.

CHANGE: We added on lines 186-188, "Responses from participants in TTT and DSD were analysed separately. Similarities in responses were thematically grouped across interventions and differences highlighted in the results and discussion sections."

Reviewers' Comments to Author:

Reviewer: 2

Reviewer Name: Rebecca Beeken

Institution and Country: University of Leeds, UK

Competing Interests: I am currently working with the authors on an unrelated project.

6. COMMENT: The authors have done a good job of addressing most of the comments raised in my previous review. I think the distinction between the approaches of the 2 programs could still be a little clearer in the introduction. I.e. When targeting habits you can either seek to help participants form new healthy habits (as in 10TT) through advice on context-specific repetition and/or seek to help participants break unhealthy habits (as in DSD) through enhancing mindfulness. Although both are about habits, they are quite different and this should be clearly acknowledged.

CHANGE: We have now made the distinction between TTT and DSD in the introduction on lines 91-94: "...two habit-based weight loss interventions which focus on habit change via different mechanisms. Ten Top Tips (TTT) is based on habit-formation through context-specific repetition, whereas Do Something Different (DSD) focuses on breaking old, unhealthy habits through enhancing mindfulness."

7. COMMENT: Similarly in terms of the framing of results/discussion, it is perhaps interesting/worth highlighting that despite these differences they were viewed similarly and the commonalities between the 2 are that they are both novel and different to standard approaches, as well as being easy to implement.

CHANGE: We thank the reviewer for highlighting the importance of this distinction and we agree clarification is beneficial. We added on lines 371-375: "Perhaps the most interesting finding was that despite the different mechanisms underlying the two interventions (forming healthy habits vs breaking unhealthy habits), they were viewed similarly by the participants. The interventions were analysed separately, yet common themes emerged from the data. The consistencies between the two are that they are both novel and more convenient to implement compared with regular approaches to weight management."

8. COMMENT: The issue of accountability is potentially not unique to these approaches but is still valued. While the weight loss achieved through the 2 approaches was similar, this should not discount the fact that they are still very different programmes, and it is therefore of interest that they are viewed similarly and different themes did not emerge.

RESPONSE: We agree it is very interesting that common themes emerged from the data, despite the interventions being different. We highlight this in the discussion as per our response to comment 7 above. Although different themes did not emerge, there were differences in the experiences amongst TTT and DSD participants, we discuss these in the 'Intervention comparison' section (lines 469-488).

9. COMMENT: It would also be helpful if the authors could clearly state what the previous qual study of the TTT found and make a direct comparison- perhaps highlighting that the current study also looked at experiences of an approach that focused on breaking habits as opposed to just forming habits.

CHANGE: We have added a comparison between the findings of the previous TTT qualitative study and our study throughout the discussion section. Please see lines 393-395: "Although not a theme in this study, a previous qualitative exploration of the experience of habit formation in TTT, showed that when actions did not easily integrate into existing routines, alternative behaviours were selected." As well as line 460: "... which is consistent with previous experiences of habit formation..." We also referred to the previous TTT qual study in the strengths and limitations section on lines 492-494, where we state: "A prior qualitative study looked at experiences of habit formation. The present study explored experiences of an approach that focused on breaking old habits and forming new habits."

10. COMMENT: One other minor comment, in the abstract, it is perhaps too strong to state 'Habit-based weight loss interventions have shown significant weight loss results and superior long-term weight loss maintenance compared with most diet and exercise interventions.' There is a paucity of studies directly comparing the long-term maintenance achieved using the habit approach compared other approaches, so I would perhaps tone this down. I would also remove 'when compared with conventional lifestyle programs' from the conclusions, as this was not done in this study.

CHANGE: We thank the reviewer for her comment and agree to this change. The abstract now reads: "Habit-based weight loss interventions have shown clinically important weight loss and weight loss maintenance." (line 28-29).

11. COMMENT: I will leave the layout of the results section to the editor's discretion as suggested by the authors in their response.

CHANGE: We have changed the layout as suggested (please see response to comment 4).

Reviewer: 3

Reviewer Name: Dr Phillippa Lally

Institution and Country: UCL, UK

Competing Interests: None declared

12. COMMENT: When I first reviewed this paper I argued that it was inappropriate to conduct a qualitative analysis across participants who participated in two interventions which are designed to operate in completely different ways. The authors have chosen to leave the analysis as it was and I still believe this to be a mistake. The authors argue that a separate analysis was not necessary to answer their research questions. However their stated objectives were to explore the experience of participants who used the interventions, discover how their lifestyles changed and consider the acceptability of the interventions. All three of these areas could be expected to be different in the two interventions. If the analyses were performed separately and similar themes emerged then that is an interesting finding but focusing on finding shared themes across the two means important aspects of the change process could be missed within one group or the other.

CHANGE: We agree that our three objectives as described above could result in different responses, depending on the intervention. We apologise for not being clear. We think our wording to address your previous comment in round one may have been misinterpreted. We did recruit participants from each intervention with the goal to analyse the responses separately. We did this, but surprisingly the responses from both interventions were very similar and so were grouped in the paper. Differences were also described (lines 469-488). As suggested, we did re-look at the data to consider differences and similarities between the two interventions and have included more detail within the context of the results and discussion sections. Despite the separate analyses for each intervention, similar themes emerged. We have now explicitly stated this in the methods section on line 186-188: "Responses from participants in TTT and DSD were analysed separately. Similarities in responses were thematically grouped across interventions and differences highlighted in the results and discussion sections." and in the discussion on lines 373-374: "The interventions were analysed separately, yet common themes emerged from the data." We hypothesize common themes emerged from the two interventions due to the similarity of weight loss and the novelty of each intervention when compared with conventional weight loss programmes. Please also see our responses to comments 7, 13 and 14.

13. COMMENT: The authors have added a claim that the paper offers insight into how and why habit-based interventions might work. It does not do this because how these two interventions work is likely to be very different and analysing across the two masks any potential insight into the mechanisms that may be operating.

RESPONSE: This sentence was added as per Reviewer 2's suggestion (Comment 18) in the previous round of peer review. We quote Reviewer 2 (Rebecca Beeken): "A strength of this study is the insight it gives into how/why habit-based interventions might work (and perhaps the different ways the two

approaches work?). I would consider including this within the strengths/limitations section and/or adding some of these insights to the 'what this study adds' section."

We have strengthened the justification for combining the findings across the two interventions as per our responses to comments 7, 12 and 14. We were expecting different themes to emerge from the data, especially when considering the interventions were different. However, despite analysing the participants' responses in each intervention group separately, similarities emerged from the data which resulted in common themes across the two interventions.

CHANGE: We have highlighted that further research to explore the mechanisms would be valuable on lines 522-524; "Further research specifically aimed to explore the underlying mechanisms of forming new habits and breaking old habits could be insightful and would add to the current body of evidence."

14. COMMENT: A detailed analysis of how DSD participants changed their behaviours, how this disrupted established habits and whether they developed new habits or became more flexible in their behaviours would be very interesting. I hope the authors will consider re-running the analysis separately for the two intervention groups as I think this could make an important contribution to the field.

RESPONSE: We had explicit goals for this study and wrote our interview schedule and inquiry logic for the interviews with these specifically in mind (see Supplementary Table 2). As both interventions achieved significant weight loss at 12-week completion and differences in weight loss were not statistically significant, our primary interest was to explore the general experiences of individuals who had completed the DSD and TTT programmes and consider the participants' views regarding the acceptability and practical application of the programmes.

We agree that analysing the underlying mechanisms would be fascinating and would contribute greatly to the literature, however, this was not the primary objective of the current study and the interview schedule (Supplementary Table 2) was not designed to explore this. Therefore, we cannot re-analyse the data to explore the mechanisms and from our available data cannot draw conclusions regarding "how DSD participants changed their behaviours, how this disrupted established habits and whether they developed new habits or became more flexible in their behaviours" as we did not ask those questions.

The 'Intervention comparison' section on lines 469-488 gives further insight into the similarities and differences between forming new habits (TTT) and breaking old habits (DSD). An example of how DSD participants differed from TTT in their behaviour change includes: "...DSD participants reported an increase in confidence post-intervention, especially when out of their comfort zone; TTT participants did not report a change in confidence. This could be due to the nature of tasks on the DSD programme which explicitly encouraged participants to increase their behavioural repertoire and perform tasks out of their usual routines and comforts. Therefore, experiencing the discomfort of performing a novel task was well-practised amongst DSD participants; whereas TTT participants repeatedly performed the same tasks each day." (lines 477-483). Furthermore, as per our response to comment 13, we added that further research to explore the mechanisms would be valuable.

VERSION 3 – REVIEW

REVIEWER	Dr Pippa Lally UCL, UK
REVIEW RETURNED	22-Mar-2018

GENERAL COMMENTS	As I have said in both my previous reviews it would not be appropriate to conduct a qualitative analysis across participants from these two different interventions. In the latest version of the paper the authors state that the analysis was in fact conducted independently in the two groups and then "responses were thematically grouped across interventions". I would therefore expect the table of themes to include codes differentiated by which groups analysis they were derived from, but this is not the case. In relation to this in the paper these codes are referred to as categories rather than codes. This should be corrected. I appreciate that the researchers only covered certain topics in the interviews and that these might not include the features of the participants experience that I consider most interesting. However the second aim of the paper is listed as investigating "whether and how the interventions affected the participants' lifestyle". I don't think that the analysis speaks to this so I would suggest removing the suggestion throughout the paper that work can provide information on how they work. The paper is able to highlight how participants felt about the interventions in general, and their views on their acceptability.
REVIEWER	Rebecca Beeken University of Leeds, UK
REVIEW RETURNED	09-Apr-2018
GENERAL COMMENTS	The authors have addressed all of my previous comments and the manuscript has improved. I have no further suggestions.