Author’s response to reviews

Title: The needs and preferences of pregnant smokers regarding tailored Internet-based Smoking Cessation Interventions: a qualitative interview study.

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Version: 2 Date: 17 August 2014

Author’s response to reviews: see over
Dear Dr Bolman,

We would like to thank the reviewers for their valuable comments and feedback. The manuscript has been revised where appropriate, with the change suggested highlighted in yellow. Below we have also included responses to the specific comments (in blue), together with extracts from the manuscript where the changes were made.

Yours sincerely,
Aleksandra Herbec
Reviewer’s report

Title: The needs and preferences of pregnant smokers regarding tailored Internet-based Smoking Cessation Interventions: a qualitative interview study.

Version: Date: 7 May 2014

Reviewer: Yvonne Hauck (R1)

Reviewer’s report:

Thank you for the opportunity to review this manuscript that addresses an important topic for public health and maternity health professionals striving to support pregnant women’s attempts to cease or decrease cigarette smoking. I would recommend acceptance for publication but have a few minor points for consideration by the authors/editors that I hope will strengthen the manuscript. The findings from this study will inform the development of appropriate and effective online support programs for pregnant women wanting to change their behaviour for their own health and health of their unborn child. I look forward to seeing the results of the RCT published.

Minor Essential Revisions

R1.1. Line 141 – 5 (39%) were primi or multiparus. This statement does not account for the 13 participants. Pregnant women are either primigravidas (first pregnancy) or multigravidas (2nd or subsequent pregnancy). Amend the statement to clarify how many were primigravida and how many were multigravida.

We have now amended this sentence: (line 199, page 10):

“The interviewed participants were on average 31 years old (range 20-41), 12 (92%) were White/British, 12 (92%) were married, 5 (39%) were multigravidas and 8(61%) primigravidas. Nine per cent (69%) had tried to quit smoking before. At the time of the interview 7 (54%) reported having quit smoking.”

R1.2. Line 145 – In relation to telephone interviews, were they a one-off interview or a series of interviews with the 13 women?

We have used only one-off interviews. We found that the participants were often very busy and reluctant to participate in longer interviews. Therefore, we tried to design the study and the interview to be as accommodating as possible, and to increase response rate we only asked for a single interview.

We have now explained in the methods section: (lines 132, page 7)

“Each participants took part in a one-off 35 minute telephone interview conducted by AH, who was blind to the trial outcome data throughout the analysis of the interview data.”

R1.3. Line 184 – Was data saturation achieved during the framework analysis with interview transcripts from 13 women?

Yes, we seemed to have reached saturation, which was among the main reasons for not conducting further interview. We have now added clarification (lines 550-551, page 25):

The small sample recruited also reflects the challenges of engaging pregnant smokers in research [see also 55, 56], but theoretical saturation appeared to be reached, with no new themes emerging in the last three interviews [61/62]. Although the sample included a similar number of smokers and non-smokers, it is possible that some trial participants who refused to be interviewed did so because of feelings of shame and embarrassment associated with continued smoking.
R1.4. Results: During the presentation of quotes the accepted convention of ... is used to acknowledge omission of some text in the quote. However, sometime [...] is used and other times just ... is used. Why are square brackets being used [ ]? I would also remove the ‘ums’ within quotes.

This was an oversight on our part; we did not intend for ‘[...]’ to denote a different kind of omission to ‘...’. For consistency, we have replaced all “[... ]” with “...”. We have also removed the ‘ums’ from the quotes.

Discretionary Revisions

R1.5. The current study explored the needs and preferences of pregnant women seeking online stop smoking support with an aim to identify features and components of ISCIs that might be most attractive to this population. If the pregnant women who were interviewed were in an intervention group within a randomised controlled trial, did these women actually seek online support or were they allocated to the intervention group that was offered online support whereas the control group were either not made aware or denied online support?

We have now clarified that the women were seeking support online on their own before coming across the advertisements for the trial (117-118, page 6):

“Views towards ISCIs were elicited from participants who were randomized to the intervention arm of the MumsQuit trial. All trial participants were recruited from among women already seeking information or support with quitting online [...].”

The trial participants were made aware that they would be randomized to receive different websites supporting quitting. The control website was providing evidence-based advice through a static, non-personalised website. We did not include too many details about the control group to keep this paper focused.

R1.6. There are many online programs available besides MumsQuit so were the participants made aware of them to compare the features offered by other online programs besides MumsQuit? Examples of other online programs are: Pregnancy and Quitting by the Australian government - http://www.quitnow.gov.au/internet/quitnow/publishing.nsf/Content/pregnancy-and-quitting; Smoking Cessation for Pregnancy and Beyond: a virtual clinic - https://www.smokingcessationandpregnancy.org/ AND SMASH out cigarettes - http://smashoutcigarettes.blogspot.com.au/2009/06/how-does-smoking-effect-your-baby.html

We did not provide participants with lists of additional resources, so as not to over-burden participants and risk non-participation. Nevertheless, we encouraged women to discuss any other resources that they had come across that they have found useful (which has been integrated in the results section).

We have added a comment on this in the limitation section together with a suggestion for future research (lines 557-564, page 25-26):

“Finally, the findings emerged from interviews with women who took part in a trial of MumsQuit intervention. To minimize participant burden, the interviewees were not explicitly asked to access and test other websites. However, they were encouraged to discuss other digital resources that they used, which has been incorporated into the results. Additionally, through the analysis we aimed to identify more generalizable findings that could inform the development of future websites as well as mobile-based interventions for pregnant women who smoke. Think-aloud studies could explore women’s views about alternative intervention features that might feasibly be incorporated into future digital interventions.”
R1.6. Line 132 – Were the women asked how often they have accessed the online support since commencing the trial 9 to 12 weeks earlier (daily, weekly, monthly, or less frequently)? A brief statement about frequency of access to MumsQuit would be useful to clarify for the reader how engaged women were with the intervention. The fact that 13 out of 33 women agreed to participate in the qualitative component is concerning. Were these women ‘not interested or time poor’ because they are not using the online support and didn’t want to admit that? Hopefully in the RCT, the researchers will be able to capture frequency of access/use of MumsQuit (i.e. how engaged they were in the intervention notwithstanding their current smoking status)

We have now added a description and clarification of engagement (lines 200-205, page 10):

“On average, interviewees logged in 5.7 times, spent 36.6 minutes browsing the website, and viewed 112 pages. This engagement was greater than among non-interviewees. It is not possible to determine whether the reasons provided for declining to participate in this study, such as time constraints, may also have influenced the levels of website engagement, or whether women’s lack of engagement meant they were less interested in participating in the interviews, but simply cited other reasons.”

R1.7. Recommendations for future research should also include an economic evaluation of these long term sustainability of online interventions within existing health systems that are struggling with increasing health care costs. Perhaps this is being addressed in the larger RCT study.

We now recommend that future studies conduct economic evaluations (lines 539-542, page 24-25):

“There is therefore a need to examine how ISCIs might best assist pregnant smokers in the context of other cessation support available to them, and particularly, how such support could be integrated with the existing stop smoking services, antenatal clinics, or health visitors and social workers, perhaps through a referral system to use the ISCI, and through monitoring of its use and outcomes. Additionally, economic evaluations of the long-term sustainability of ISCIs should be conducted to identify and contextualize the cost burden in health systems that face increasing health care costs.”

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests: I declare that I have no competing interests
Reviewer's report

Title: The needs and preferences of pregnant smokers regarding tailored Internet-based Smoking Cessation Interventions: a qualitative interview study.

Version: 1  Date: 23 June 2014

Reviewer: Caitlin Notley (R2)

Reviewer's report:

This paper is an extremely interesting and well written contribution to the literature on developing novel interventions for smoking cessation. The focus is on an online smoking cessation intervention (ISCI) developed specifically for pregnant women. The contribution of the paper is particularly useful as the approach gives a rigorous and in-depth patient perspective, which supports well the conclusions regarding preferences for a tailored and targeted approach to smoking cessation interventions for pregnant women. I have given detailed feedback and suggestions for revisions to the paper below. Most of these suggestions are minor essential revisions or discretionary revisions that I would welcome author feedback or reflection on, rather than major compulsory revisions.

R2.1. The question addressed in this paper is a mixture of an exploratory approach to the needs and preferences of pregnant smokers, and a process evaluation approach of an already developed intervention (Mumsquit). I felt that the question could do with some clarification given these dual aims. Most of the data presented and themes derived from the data seem to answer process evaluation type questions, i.e. they are given by participants in response to the specific intervention received as part of a larger RCT. This should be stated more explicitly in the paper, or perhaps in the discussion as a limitation, as the expressed needs and preferences are influenced heavily by this context. This is not to say that the data are not useful, but simply that the preferences of this sample are given in response to the developed intervention, which may limit the extent of the expressed preferences.

From the beginning the interview study was designed to identify needs and preferences for internet-based support, and not for process evaluation. We agree that the interviews were influenced by the trial context, however, we also see it as a strength – to our knowledge, at the time MumsQuit had been the first and only web-based intervention that offered a structured, tunneled and personalized cessation support to pregnant women, rather than an information-only website of which there are a few. This is also the main reason why we decided to interview only the intervention participants, and not the controls or women from the general population, as they would not have been exposed to the many features that could form part of such structured and tunneled interventions, and hence could not have provide insights on their experiences with trying to quit using such program.

We have now added clarifications on this in four places in the manuscript. First, at the end of introduction (lines 99-102, page 6):

“This study sought to explore the needs and preferences of pregnant smokers seeking online stop smoking help to inform future research on the features of ISCIs attractive to this population, which were extracted from responses of women taking part in a pilot trial of a new internet-based cessation intervention, MumsQuit [29]”

Second, in the section on participant selection (line 116, page 6):
“Views towards ISCIs were elicited from participants who were randomized to the intervention arm of the MumsQuit trial.”

Third, in the section on Interviews (line 136, page 7):

“Interviews followed a flexible semi-structured schedule of open questions exploring 4 broad topics anchored to the context of MumsQuit intervention: reasons for joining the trial, experiences of and views towards MumsQuit, recommendations for future ISCIs for pregnant women, and views towards ISCIs more generally.”

Four, we have also added a reflection on the context at the end of the discussion (lines 557-564, page 25-26):

“Finally, the findings emerged from the interviews with women who took part in a trial of MumsQuit intervention that provided the context, and to minimize participant burden the interviews were not explicitly asked to access and test other websites. However, the interviewees were encouraged to discuss other digital resources that they used, which has been incorporated into the results. Additionally, through the analysis we aimed to identify more generalizable findings that could inform the development of future websites as well as mobile-based interventions for pregnant women who smoke. Think-aloud studies could explore women’s views about alternative intervention features that might feasibly be incorporated into future digital interventions. Notwithstanding these limitations, this study reveals the various needs and preferences around ISCIs, as expressed by women who already have experience of an intervention that was minimally targeted to pregnancy and highly-structured (i.e. MumsQuit), and who represented a range of views and levels of engagement with the program.”

R2.2. The methods are appropriate to the research aims of the paper, and well described. The framework approach is applicable to research seeking to answer specific intervention development questions. Authors should clarify whether any specialist software was used to support the analysis.

We did not use any formal qualitative analysis software. Data analysis was conducted using Excel. We have amended the sentence slightly to make this clear (line 173, page 9):

“FA [framework analysis] was conducted manually by AH using Microsoft Excel to chart accounts matrixes, with interpretation verified via independent theme generation by EB.”

R2.3. Participants were recruited from just the intervention arm of an ongoing RCT. This decision needs some justification which could be linked back to comments above about clarifying the question explored within this study. If the question was focused just on development of this specific intervention then this is appropriate, but if the question more widely sought patient’s views on ISCIs beyond the intervention (more exploratory), then further justification for not recruiting from the control group or a wider sample should be given, either here or in the discussion.

>> We have addressed this comment in our response to an earlier comment (R2.1), as well as to the first reviewer (R1.6), where we provide reasons for not including control participants or women from
the general population in the interview study as we were interested to learn about views of women who had had a chance to use a structured intervention, such as MumsQuit.

R2.4. Details of the participant demographics should be given at the start of the findings section, rather than in the methods.

>>We have now moved the participants’ characteristics from the methods section to the beginning of the results section (lines 196-205, page 10).

R2.5. Interviews – I wondered why more personal and detailed information was not requested on the participant’s pregnancy? The interview described focused very clearly on the intervention and ISCs more generally. However, as the conclusions suggest a high degree of tailoring may be attractive to pregnant women, it would perhaps have been useful to understand the individual contexts of the women’s pregnancies in more depth? If the authors agree this may be acknowledged as a limitation in the discussion section of the paper.

>>The study focused on women’s preferences for support. Additionally, we decided not to ask any non-essential or intrusive questions because this could shift the focus of the interview, as well as deter some women from participating, or lead to them withdrawing, which, given the difficulty in finding participants in the first instance, would be a considerable problem. However, we agree with the reviewer that future studies could investigate this further, and we now mention it in the discussion section (lines 525-529, page 24):

“An implicit assumption of our study was that pregnant women have relatively homogeneous ISCI preferences and needs. Future qualitative and quantitative work might investigate whether personal pregnancy circumstances, such as parity or medical complications, might affect views towards ISCIs or uptake rates and, if so, whether ISCIs might be tailored to increase personal relevance and uptake.”

R2.6. Description of the intervention is given under the interview sub-heading within methods. I felt that the intervention needed a separate sub-heading and description. Specifically, a definition of how the intervention is currently ‘minimally-tailored’ (a term used in the discussion) is needed.

We have added a sub-heading ‘MumsQuit intervention’ and have expanded on the intervention description to also clarify the concept of a ‘non-smoker identity’ to which the reviewer has referred to in R2.19. We have also changed the term used in the discussion from ‘minimally-tailored’ to ‘minimally-targeted’ to pregnancy (it has been a mistake in the original manuscript), and we have also clarified what minimal targeting means under the MumsQuit intervention sub-heading (lines 143-157, pages 7-8):

“MumsQuit intervention
‘MumsQuit’ intervention constituted an anchor for a broader discussion about attractive features of ISCIs. MumsQuit is an adaptation of ‘StopAdvisor’, a theory- and evidence-based ISCI delivering tailored advice through a structured, 4-week automated program that emulates behavioral support from an expert advisor (for details see [31, 32]). Both interventions are informed by PRIME theory of motivation [33], which addresses key constructs in smoking cessation, including motivation, self-regulatory capacity and skills, and intervention engagement. The theory also outlines the importance of fostering a non-
smoker identity, which is a core BCT in smoking cessation [34], because from identity follows identity-congruent motives, self-regulation, and behavioural stability. The treatment strategy used in MumsQuit and StopAdvisor mirrors that offered throughout UK smoking cessation services. MumsQuit differs from StopAdvisor by means of ‘minimal targeting’ to pregnancy, which involved modification of advice on cessation medications (e.g. exclusion of Varenicline and Bupropion as options, and qualifying advice about nicotine replacement therapy (NRT)), provision of maternal smoking risk information, minimally relating quit progress feedback to baby’s health, and inclusion of images appealing to mother and pregnant ex-smoker identities.”

R2.7. A short discussion of ethical considerations addressed in the study would be appropriate to include within the methods section. I would particularly welcome a discussion of reflexivity and the role of the researcher in the analytical process.

>> We have now added a new section after ‘Data analysis’ in the methods called ‘Reflexivity’ (lines 181-192, page 9):

**Reflexivity**

GB is an experienced qualitative researcher, while AH, EB & IT are mixed-methods researchers. Except for IT, the researchers had minimal experience with working with pregnant smokers prior to initiating the research program on digital interventions for pregnant women, of which MumsQuit is a part. However, EB, JB and RW have published extensively on tobacco control, smoking cessation, and health behavior change. Additionally, AH, JB, IT and RW conduct research on developing and evaluating tailored, theory-informed digital interventions for smoking cessation based on taxonomies of behavior change. The authors believe that well-designed and appropriately tailored and targeted digital intervention have potential to support smokers to quit, both as stand-alone interventions, and as aids to traditional treatments. The background of the authors and the context of the wider research program influenced the study design and the analysis by focusing in on gaining insights on how to further develop more tailored interventions for pregnant smokers.

R2.8. Data analysis – this is generally well described. Further clarification is however required on 2 points – the authors suggest that ‘emergent themes and disputes were discussed and resolved with other co-authors’. It would be useful to understand how this process occurred – perhaps an example of where there was dispute and how a consensus view was reached.

>> We encountered few ‘disputes’ (indeed, the term ‘dispute’ overstates the nature and extent of conflict between coders, and so we have changed the word ‘dispute’ to ‘disagreement’ in the manuscript). Initial coding was undertaken by the first author, in regular discussions with EB, as well as with BG and IT and in consultation with JB and RW, who were most experienced in research on digital cessation interventions. Coding disagreements were discussed and consensus reached in face-to-face meetings. We did not keep a detailed record of these meetings, but we recall that there were disagreements on how to best present the final matrix table. We also reached consensus when deciding that the theme ‘testimonials (2.3)’ [from other women] is separate from the theme ‘reasons to quit’ (2.1, which is devoted to the benefits of quitting, and risks of smoking). Ultimately, we based our final decision on the evidence from the data, and on how to efficiently present complex findings to increase their relevance for those who design interventions (and who may not have any background in psychology, smoking cessation, or qualitative research).

>> We view such informal coding discussions as an inevitable part of the coding process where multiple
coders are involved. To our knowledge, few published qualitative studies describe areas of disagreement and the process of seeking agreement, and we do not wish to imply to the reader that disagreements were notable or had a major impact on our findings. Thus, we do not think that providing details on it would add value to this paper, but would be willing to reconsider should the editor deem this information necessary for publication.

R2.9 The authors also mention and reference the processes of constant comparison and deviant case analysis. Again, it would be useful to see examples of this, particularly deviant case analysis, in action. Perhaps this could be indicated or incorporated with the additional data extracts provided? The discussion section should also pick up on this important analytical step – how did the deviant case analysis add to, modify or extend the emergent thematic framework?

>> Both of these processes are integral to the Framework Analysis and we closely followed the method outlined by Ritchie J, & Lewis (2003), which involved systematic charting of participants accounts in matrices in Excel, with columns devoted to themes, and rows to individual participant’s data. This method allowed to chart (and compare) the spectrum of responses across and within themes and participants’ accounts, and to identify cases that deviated from the rest, which in the present study were interpreted as potential targets for tailoring of intervention to participants’ individual needs and preferences.

>> Throughout the results section we clearly state how participants differed in their experiences, views and preferences for the different features and type of support offered by internet interventions (e.g. in sections 2.1., 3.4., 5.1, 5.2., 6.2). For example, some women welcomed e-mail reminders while others thought that e-mails could become spam. Also, while some women were interested in the different medications for quitting, others were not interested in them at all. In the discussion section we then discuss the importance of tailoring. We believe that we have been very transparent about our analysis method and results, and therefore did not make any further changes to the manuscript.

In the results section the authors clearly report the key findings with judicious use of data quotations, which very well support the conclusions of the paper. There is a clear thread through the results section and the addition of the qualitative excerpts adds further support and reassurance. I had a few thoughts:

R2.10. Section 1.3 ‘accessible support’ – were any alternative views expressed suggesting that, for some women, there might be a preference not to be constantly reminded about giving up smoking? i.e. perhaps some women, conversely to the reported findings, prefer to occupy themselves with other distraction techniques and find an intensive intervention actually reminds them about smoking and increases craving? This may not be the case, but I wondered if this view was apparent at all for any of the sample?

>>Yes, one woman mentioned disengaging with MumsQuit as she was trying to forget about smoking, but she has not expressed any negative views on the intervention or its intensity, and did not report the intervention increasing her cravings. Moreover, MumsQuit recommends women to engage in distracting activities outside of the intervention (and some women reported doing so). The value of internet-based interventions is that they can offer support as well as additional aids to distraction that women can access. Ultimately it is the users who decide how and when to engage with them, and research shows that some users may require only a minimal contact with the internet-based intervention and still benefit from it (Christensen & Mackinnon, 2006).
R2.11. Theme 2 – line 253 onwards. There are two very opposing views presented here regarding the preference for either positive or negative imagery. How might these opposing views be incorporated into the tailored intervention?

>>We now added some suggestion in the discussion section on how this could be reconciled (lines 464-466, page 21):

“We also found that women may differ in their preferences for accessing information on the negative health outcomes of smoking, and such content could be therefore made optional for women to access.”

R2.12. Section 3.2 – self-monitoring and feedback – to what extent did this desire to be monitored and rewarded for progress link specifically to pregnancy and the progress of the pregnancy?

>>Our findings did not reveal answers to this question. Also, the qualitative data and analysis are not well suited to assess the extent of relationships between variables, and we believe that quantitative studies may be better placed to answer such questions in the future. However, as we described in the results in theme 4.1. (focus on pregnancy) and in the discussion (lines 461-466), women were interested in interventions that target their content, features and communications to pregnancy, which would not be limited to the theme self-monitoring and feedback.

R2.13. Section 3.3 – the authors state that many ‘struggled to quit’. I wondered how this was known or measured?

>>This was based on several women explicitly stating that they found quitting challenging, or have relapsed. This arose spontaneously in interviews; we did not take quantitative measures of this. We now added a clarification at the start of the section 3.3 (lines 316-317, page 14):

“Many participants reported struggling to quit or remain abstinent, and some reported relapsing to smoking. Most therefore expressed a need for frequent positive support and encouragement, either via the website or e-mails.”

R2.14. Section 3.4 – e mail reminders. Is there any more process evaluation specific data in relation to this point. i.e. is it known the extent to which e mails were actually received and opened?

>>We did not collect this data.

R2.15. Section 5.1 – flexible intervention structure – at the end of para 1 it is stated that some participants expected a more lasting source of support. Was there any indication of how long this support should last for? And should this be pregnancy specific or continue post-partum?

>>The interviews did not give us an indication of how long such support should last for, and women did not discuss receiving support after giving birth, and so we have not changed the manuscript in this respect. One of the authors – IT – is leading further work on the digital interventions for pregnant women who smoke, so our future work may be able to address post-partum support.

R2.16. Section 5.2 – medications – was there any mention of e-cigarettes?
One women mentioned thinking about trying e-cigarettes in the future, but it did not emerge as a theme in relation to ISCs or medications. At the time of data collection e-cigarettes were not yet very popular (by around December 2012 only 10% of quit attempts in the UK were made with e-cigarettes. http://www.smokinginengland.info/sts-documents/), and this is also a reason why MumsQuit did not include any advice on them. Also it was not the focus of the interviews, and we aimed to elicit views and not prompt smokers too much.

R2. 17. Section 6.2 – personal support – was there any mention of linking with other health care professionals, e.g. midwives or health visitors? This point may also be considered by the authors in the discussion as a way of integrating the intervention with other smoking cessation support? Also, in tailoring the intervention specifically to pregnant women I felt that a consideration of the wider context of healthcare support and advice during pregnancy should be included.

The interviewees have not explicitly mentioned health providers in this context. We now give examples of how personal support could be provided within the intervention (lines: 475-479, page 22):

“Additionally, offering a personal support from an expert in smoking cessation was also viewed favourably, and indeed has been shown elsewhere to improve the effectiveness and usability of ISCI [44]. Personal support has been offered in a number of other internet-based smoking cessation interventions, and involved an online chat with cessation ‘experts’ or provision of a telephone line in case of strong cravings [22] as well as more proactive telephone support from counselors [45]. Future studies of ISCs for pregnant women may also assess inclusion of personal support from midwives trained in smoking cessation.”

The discussion emphasizes a need for research on how to best integrate digital interventions into healthcare systems (lines 532-540, page 24). Additionally, we have expanded on the recommendations for how digital intervention could be integrated with other help received by women (lines 532-542, pages 24-25):

“Finally, although ISCs may be particularly attractive to women who are not accessing other support, the present study suggests that at least some pregnant smokers might be interested in using ISCs alongside traditional interventions. [...] There is therefore a need to examine how ISCs might best assist pregnant smokers in the context of other cessation support available to them, and particularly, how such support could be integrated with the existing stop smoking services, antenatal clinics, or health visitors and social workers, perhaps through a referral system to use the ISCI, and through monitoring of its use and outcomes.”

Discussion section – This is very well written and clear. Some specific comments:

R2.18. Line 462 onwards there is a discussion of smoking relapse. Was there any data to support whether support for relapse should be part of this same intervention, or something separate? A short discussion around the difficulties in defining smoking lapse and relapse may also be relevant here.

>>We have now clarified in the results section (3.5) that participants expected to receive support with relapse/lapses as part of the same intervention (lines 339-340, page 16):
3.5. Support in relapse. Participants viewed relapse as a common challenge in pregnancy, and emphasized that assistance with failed quit attempts should be offered alongside support for first-time quit attempts within the same ISCI.

Also, in the discussion we suggest that more research is needed on lapses and relapses in the context of ISCI (lines 4718-472, page 21):

Provision of extensive post-relapse support was viewed as an integral part of the intervention, and might be especially important given the high relapse rates among pregnant smokers (around 23%) [43]. Identifying and distinguishing lapses from relapses [43, 44], as well as their appropriate management in this population using ISCI warrant further research.

R2.19. Offering personal support was favored by participants – how might this work in practice?

As we mentioned in response to an earlier comment (R2.17) we have now added some examples in the discussion section for the delivery of personal support, such as through e-mails or telephone from a range of experts.

R2.20. Line 478 onwards – in this paragraph discussing BCTs there is specific mention of the concept of identity. This came rather out of the blue. The concept needs defining. An example would also be useful – how might an intervention ‘strengthen the identity of a non-smoking pregnant woman’?

We have partially addressed this comment in our response to the reviewer’s earlier comment (in R2.6) by expanding in the methods section on the description of MumsQuit and the concept of ‘identity’. One of the coauthors (IT) is researching identity in relation to smoking, and her future studies might provide a better indication of how we can address identity in this context. We have also included an example of how a non-smoking identity of a pregnant women could be fostered (lines 493-498, pages 22-23):

Strengthening a non-smoker identity in pregnant women or mother offers a relatively novel and potentially useful BCT for use within an ISCI, particularly given participants’ positive reception of imagery appealing to these identities within the ISCI. This might also involve encouraging women to think of themselves as a non-smoking, health-conscious mother-to-be who cares for her own health and the baby’s health and wellbeing, and therefore does not smoke. However, effectiveness and acceptability of these components warrants further research.

R2.21 I felt that there was a need to draw links between the data analysis themes presented. For example, to what extent did the desire for self-monitoring and feedback (3.2) link to the focus on pregnancy (4.1)?

We have addressed this issue in our response to an earlier comment (R2.12). We agree with the reviewer that this is an interesting issue, and in the results (3.2) we report participants wanting the feedback on their progress with the quit to link with the health benefits of the developing baby. However, we cannot comment on the extent to which these two, or any other themes were linked. Also, we found that many of the themes were linked by the ‘underlying needs’ of women, and where we have found connections we have described them in the final section of the Results: “Participants’ underlying core needs” (lines 434-445, page 20).
R2.22 In general, I felt that I wanted to understand more about the pregnancy status of this group of participants. As the message is that participants would welcome a more tailored and individualized intervention, I felt that pregnancy specific factors might be important here. E.g. parity, complex pregnancies, level of support received during the pregnancy. If this data was not collected then this might be acknowledged as a limitation of the study?

We have addressed the comment on limited provision of personal or pregnancy details in our response to the reviewer’s earlier comment (in R2.5), and we make suggestions that future studies would be needed to address this question appropriately (lines 525-529, page 24):

“An implicit assumption of our study was that pregnant women have relatively homogeneous ISCI preferences and needs. Future qualitative and quantitative work might investigate whether personal pregnancy circumstances, such as parity or medical complications, might affect views towards ISCI or uptake rates and, if so, whether ISCI might be tailored to increase personal relevance and uptake.”

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I declare that I have no competing interests