## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (http://bmjopen.bmj.com/site/about/resources/checklist.pdf) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

TITLE (PROVISIONAL)	Systematic review of behavioural smoking cessation interventions
	for older smokers from deprived backgrounds
AUTHORS	Smith, Pamela; Poole, Ria; Mann, Mala; Nelson, Annmarie;
	Moore, Graham; Brain, Kate

### **VERSION 1 – REVIEW**

REVIEWER	Annette Dobson
	University of Queensland, Australia
REVIEW RETURNED	31-Jul-2019

<ul> <li>While the prospect of screening for lung cancer for such people is mentioned repeatedly, this is not really relevant for countries with no such plans. In my opinion mentioning this is a distraction in the Abstract and elsewhere - it could just be mentioned in the Discussion.</li> <li>The articles selected were highly heterogeneous and no clear pattern emerged. Thus the conclusion is justified. However the authors might also have recommended studies to identify social and psychological barriers to quitting in the target populations, before suggestion more RCTs.</li> <li>The manuscript could be substantially shortened.</li> <li>Table 1 could be replaced by a paragraph listing the search terms By the way the word 'equation' is wrongly used in the column heading as nothing is being equated.</li> <li>Table 2 is extensive and adequately describes the study samples and interventions. Most of the Results and Discussion sections repeat the information in Table 2. I found this very distracting as I kept having to check back for consistency. For me the table alone would be more than adequate. But it could be made even more</li> </ul>	GENERAL COMMENTS	remaining smokers are people who find quitting more difficult - such as long term heavy smokers. This review aims to examine evidence of effectiveness of interventions in such a group, namely older smokers with low SES. While the prospect of screening for lung cancer for such people is mentioned repeatedly, this is not really relevant for countries with no such plans. In my opinion mentioning this is a distraction in the Abstract and elsewhere - it could just be mentioned in the Discussion. The articles selected were highly heterogeneous and no clear pattern emerged. Thus the conclusion is justified. However the authors might also have recommended studies to identify social and psychological barriers to quitting in the target populations, before suggestion more RCTs. The manuscript could be substantially shortened. Table 1 could be replaced by a paragraph listing the search terms. By the way the word 'equation' is wrongly used in the column heading as nothing is being equated. Table 2 is extensive and adequately describes the study samples and interventions. Most of the Results and Discussion sections repeat the information in Table 2. I found this very distracting as I kept having to check back for consistency. For me the table alone would be more than adequate. But it could be made even more informative if the results were presented using confidence intervals

REVIEWER REVIEW RETURNED	Siti Munira Yasin (Dr) Faculty of Medicine, UiTM Sungai Buloh 06-Aug-2019
GENERAL COMMENTS	Thank you for submitting this review article. It is an important article in the area of smoking cessation, especially among older

adults.

My comments: English good Title: Acceptable
Abstract: The author addressed the issue of screening for lung cancer, which has little relationship to this systematic review. Since the inclusion criteria does not include elements of eligibility for lung cancer screening, I would suggest omitting this throughout article. It can however be included in introduction, as one of current screening programme for heavy smokers.
<ul> <li>Methods:</li> <li>Please state clearly how duplicates of the literatures managed were.</li> <li>What are were inclusions and exclusion criteria for the chosen articles?</li> <li>Please include the year articles were chosen from</li> <li>Outcome of interest was not clearly mentioned. Please state these in the methods section.</li> <li>Quality assessment: I would suggest authors to consider using more specific tool with scoring to grade the articles. E.g. Newcastle- Ottawa Scale (NOS), PRISMA etc.</li> </ul>

## **VERSION 1 – AUTHOR RESPONSE**

### **Reviewer 1**

• While the prospect of screening for lung cancer for such people is mentioned repeatedly, this is not really relevant for countries with no such plans. In my opinion mentioning this is a distraction in the Abstract and elsewhere - it could just be mentioned in the Discussion. Thank you for this comment. A key aspect of this review is to focus on a 'lung-screening eligible population' due to the likeliness of this form of screening being implemented in the UK in the near future and the gap in understanding how best to approach delivering prevention interventions (i.e. smoking cessation) for this population. We appreciate that the case for lung cancer screening being implemented in other countries may not be as relevant. However in this review, when lung cancer screening is mentioned, it focuses specifically on the research priority for the UK. We have adjusted (and highlighted) multiple statements to make this focus more explicit.

• The articles selected were highly heterogeneous and no clear pattern emerged. Thus the conclusion is justified. However the authors might also have recommended studies to identify social and psychological barriers to quitting in the target populations, before suggestion more RCTs. This is a really useful comment and definitely highlights where research should move towards in order to further understand the psychosocial barriers and facilitators to quitting for older deprived smoking. An appropriate statement has been added to the conclusion to reflect this point.

• The manuscript could be substantially shortened. Table 1 could be replaced by a paragraph listing the search terms. By the way the word 'equation' is wrongly used in the column heading as nothing is being equated.

Thank you for this. We feel the table is a clear and concise way of detailing the study designs, outcomes, interventions (as there are a variety that could have been included) and the population alongside their search terms. For clarity we have adjusted the column heading to read 'search terms and connectors'.

• Table 2 is extensive and adequately describes the study samples and interventions. Most of the Results and Discussion sections repeat the information in Table 2. I found this very distracting as I kept having to check back for consistency. For me the table alone would be more than adequate. But

it could be made even more informative if the results were presented using confidence intervals rather than p-values.

We appreciate that there was some redundancy with information in text and information in the table and therefore have attempted to streamline the results that are reported in the table and text. We feel having the table alone would not provide a detailed enough narrative of the data collected from the review.

Regarding our lack of reporting confidence intervals, where available all statistical values were reported. We have added in a further limitation statement in the discussion to address the lack of quality in reporting relevant statistics, such as confidence intervals.

### Reviewer 2

Abstract: The author addressed the issue of screening for lung cancer, which has little relationship to this systematic review. Since the inclusion criteria does not include elements of eligibility for lung cancer screening, I would suggest omitting this throughout article. It can however be included in introduction, as one of current screening programme for heavy smokers.

Thank you for this comment. As previously mentioned in a response to reviewer 1, the decision to have a focus of lung cancer and lung cancer screening was made due to the future implementation of lung cancer screening in the UK and the importance of understanding effective behavioural SCIs for a lung screening eligible population. We do appreciate that although lung cancer/ lung cancer screening was not an inclusion criteria for the review, this did heavily guide and influence the criteria that were used (i.e. age and deprivation). We believe that giving the reader information on lung cancer in this review is necessary as a way to justify why the target population was chosen. In order to address your comment we have reduced the detail on lung cancer screening throughout the paper; however, we have still maintained a thread of this focus in order to address its importance and fit with the target population chosen for this review.

#### Methods:

1. Please state clearly how duplicates of the literatures managed were.

A statement has been added to page 6 under the methods section that details how duplications were managed.

2. What are were inclusions and exclusion criteria for the chosen articles?

The inclusion criteria are detailed on page 7 under 'Study eligibility criteria'. We have added in a preceding statement to make this clearer.

3. Please include the year articles were chosen from

Thank you for noticing this. We have added this to the search strategy on page 6.

4. Outcome of interest was not clearly mentioned. Please state these in the methods section.

We have included the outcomes on page 7 on the 'Study eligibility criteria' heading.

5. Quality assessment: I would suggest authors to consider using more specific tool with scoring to grade the articles. E.g. Newcastle- Ottawa Scale (NOS), PRISMA etc.

Thank you for the suggestions of other scoring tools. To our knowledge PRISMA isn't a tool that can be used to grade papers but is a checklist used for reporting in systematic reviews that we used in the current review. Due to the varying study designs that came out of the search we decided an adapted version of the CASP tool was most appropriate in order to be able to use a consistent scoring system across RCT's and other study types that were included (i.e. cohort and observational studies). We decided to avoid using summary score checklists such as NOS, Downs and Black checklists etc. The inter-rater reliability of the NOS has been questioned as well as its usefulness in identifying between studies of high and low quality and its lack of external validation makes it difficult to assess this (Hartling et al., 2013).

# **VERSION 2 – REVIEW**

REVIEWER	Annette Dobson University of Queensland Australia
REVIEW RETURNED	15-Sep-2019
GENERAL COMMENTS	Changes to the manuscript are minimal. Was the literature really searched from 1900 to 2018, or should that be 2000-2018?