

## 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. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Systematic review of universal school-based resilience interventions targeting adolescent tobacco, alcohol or illicit drug use: review protocol
<b>AUTHORS</b>	Hodder, Rebecca; Freund, Megan; Wolfenden, Luke; Bowman, Jenny; Gillham, Karen; Dray, Julia; Wiggers, John

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Mark Greenberg Prevention Research Center Pennsylvania State University United States
<b>REVIEW RETURNED</b>	23-Feb-2014

- The reviewer completed the checklist but made no further comments.

<b>REVIEWER</b>	Roger E. Thomas Department of Family Medicine, University of Calgary, Calgary, Alberta, Canada.
<b>REVIEW RETURNED</b>	23-Feb-2014

<b>GENERAL COMMENTS</b>	<p>1. Purpose. This is a Protocol. I will use as my framework the Protocol standard used for Cochrane reviews, in which all issues are intended to be resolved before the review proceeds. I will make my comments in the spirit of trying to ensure your review runs smoothly rather than reviewers afterwards ask for changes or more details.</p> <p>2. Intervention (pp. 5-6). The authors state that "Studies will be included if they report interventions that address student resilience in some way..."</p> <p>There is no definition of resilience, and thus no statement of why a particular definition was chosen.</p> <p>There is a large literature on resilience, with multiple definitions, and at least 31 possible components of resilience in some definitions. This literature is not analysed.</p> <p>3. Eligibility criteria. (p. 4) "participants aged 18 years or under" What is the lower age limit?</p> <p>Study design. (p. 4) You need to state how you define the study designs listed (e.g., the Cochrane EPOC group requires 3 observations before and 3 after the intervention for time series).</p> <p>You state (p. 4) "all methods int the review will be consistent with the</p>
-------------------------	--

	<p>Cochrane Handbook." However, many of the designs you propose are not in the Handbook. Please state how you will define and will analyse them.</p> <p>Length of follow up (p. 5). You state "any follow up": how short? Pre-post?</p> <p>Primary outcomes. (p. 5) Will you report and analyse established use scales if studies report them?</p> <p>Under drugs only 3 drugs are listed. Reason?</p> <p>Interventions.</p> <p>Because there is no definition of resilience there is no statement why the different elements you propose are resilience or not. Many fit also into social influences and social competence frameworks. If your review is to make a contribution to the key issue of resilience (which is of interest to a wide group of researchers and policy makers) the definition issues need resolution.</p> <p>Will you group resilience interventions?</p> <p>Will you group resilience outcomes for analysis? If so, which ones?</p> <p>Information. p.6 CINAH is CINAHL</p> <p>I recommend you use the single citation utility in PubMed and enter your studies. This will give you another way of finding all the citations in this large literature.</p> <p>Will you use the Cochrane Handsearching results?</p> <p>Study selection.</p> <p>Please show (perhaps as a web file) your standardised screening tool.</p> <p>Risk of Bias.</p> <p>How will you assess non-randomised studies? Newcastle-Ottawa scale? STROBE?</p> <p>Data analysis</p> <p>Will you write authors to ask for them to compute intention to treat results and also compute them yourselves if not available?</p> <p>Study heterogeneity</p> <p>Two other ways of assessing causes of heterogeneity are sensitivity analyses by RoB and meta-regression. Will you use these?</p> <p>ICC How will you assess if a study is similar enough to use its ICC results? This is a tricky issue.</p>
--	--

<b>REVIEWER</b>	Federica Vigna-Taglianti Department of Clinical and Biological Sciences, University of Torino,
-----------------	---

	Italy  I'm second author of one of the three Cochrane systematic reviews which already undertook a similar work
<b>REVIEW RETURNED</b>	10-Mar-2014

<b>GENERAL COMMENTS</b>	<p>Note to point 1. The effectiveness of school-based programs on tobacco, alcohol and drugs use have already been explored in 3 Cochrane reviews and several other SRs. The only point which makes the present protocol different from the others is the focus on intervention addressed to RESILIENCE. However, the definition of resilience is very broad, so the selection of studies based on this criteria won't be different from that applied by the other SRs. I suspect the final included studies will be the same, so this systematic review, despite a huge work, won't give the research community any new result. Moreover, the search strategy will replicate the work already done by someone else! Useless effort!</p> <p>Note to point 3. Since the work has already been done by other 3 or more research groups, I think the most cost/effective plan would be to contact these groups and make a collaborative study on it, first examining if the definition of resilience interventions is able to select a part of the studies already included in the reviews; if yes, it will be justified to publish a SR on it. However, it won't be needed to start from the beginning (performing the search strategy) but simply re-examine the studies already included in the SRs. I'm sure the three research groups will be collaborative on it.</p> <p>Note to point 14. It is likely to be redundant publication.</p>
-------------------------	---

### VERSION 1 – AUTHOR RESPONSE

Reviewer 1: No responses provided as no comments were made by the reviewer.

Reviewer 2:

1. Purpose. This is a Protocol. I will use as my framework the Protocol standard used for Cochrane reviews, in which all issues are intended to be resolved before the review proceeds. I will make my comments in the spirit of trying to ensure your review runs smoothly rather than reviewers afterwards ask for changes or more details.

-Many thanks for your detailed feedback to improve our review protocol.

2. Intervention (pp. 5-6). The authors state that "Studies will be included if they report interventions that address student resilience in some way..."

There is no definition of resilience, and thus no statement of why a particular definition was chosen.

There is a large literature on resilience, with multiple definitions, and at least 31 possible components of resilience in some definitions. This literature is not analysed.

-We agree with the comment regarding the existence of multiple definitions of resilience. Information regarding these definitions of resilience has been added to the introduction (see page 3).

-The description of the intervention criteria has also been amended to address the varied possible

definitions and components of resilience. The requirement is specified as an intervention that consists of at least one internal and one external resilience factor, and an inclusive list of internal and external resilience factors has also been added to the manuscript (see page 6-7).

3. Eligibility criteria. (p. 4) "participants aged 18 years or under" What is the lower age limit?

-A lower age limit of 5 years has been added to the manuscript (see page 5 and 10).

Study design. (p. 4) You need to state how you define the study designs listed (e.g., the Cochrane EPOC group requires 3 observations before and 3 after the intervention for time series).

You state (p. 4) "all methods in the review will be consistent with the Cochrane Handbook." However, many of the designs you propose are not in the Handbook. Please state how you will define and will analyse them.

-References and where applicable definitions have been added to the non-randomised study designs that are planned for inclusion in the review. All non-randomised trials will be analysed separately and described narratively, this detail has been added to the manuscript (see page 5).

Length of follow up (p. 5). You state "any follow up": how short? Pre-post?

-Studies will a follow up of 6 months or longer post intervention commencement will be included. The length of follow up has been amended in the manuscript (see page 5).

Primary outcomes. (p. 5) Will you report and analyse established use scales if studies report them?

-Data from established use scales will be both collected and analysed if studies report them. This detail has been added to the manuscript (see page 6).

Under drugs only 3 drugs are listed. Reason?

-The three drugs are provided as examples only, and studies reporting use of any illicit drugs will be eligible. Amendments have been made to the manuscript to make this clear (see page 6).

Interventions.

Because there is no definition of resilience there is no statement why the different elements you propose are resilience or not. Many fit also into social influences and social competence frameworks. If your review is to make a contribution to the key issue of resilience (which is of interest to a wide group of researchers and policy makers) the definition issues need resolution.

-Given the complexities and variability in defining resilience, and the cross over between resilience and intervention approaches such as social competence (i.e. both address life skills, problem solving, self-esteem etc) a resilience approach has been defined as one which addresses at least one internal and one external resilience factor irrespective of overall theoretical intervention definition or approach. The manuscript has been amended to reflect this clarification (see page 7).

Will you group resilience interventions?

-A subgroup analysis of resilience interventions will be conducted if feasible, with included interventions focused solely on resilience (resilience interventions) versus interventions that focused on resilience as well as other determinants of substance use (multi-dimensional interventions). The

manuscript has been amended to reflect this (see page 11).

Will you group resilience outcomes for analysis? If so, which ones?

-Resilience outcome data will not be collected or analysed.

Information.

p.6 CINAH is CINAHL

-Thank you for this correction, the manuscript has been amended to reflect this (see page 8).

I recommend you use the single citation utility in PubMed and enter your studies. This will give you another way of finding all the citations in this large literature.

-Thank you for the suggestion, the manuscript has been amended to reflect this (see page 8).

Will you use the Cochrane Handsearching results?

-Thank you for this recommendation. Unfortunately there are currently no hand searching results available within the last 5 years for the selected journals.

Study selection.

Please show (perhaps as a web file) your standardised screening tool.

-A draft screening tool which is yet to be piloted is included in the resubmission as Web Only Appendix 2.

Risk of Bias.

How will you assess non-randomised studies? Newcastle-Ottawa scale? STROBE?

-The Newcastle-Ottawa scale will be used to assess the risk of bias in non-randomised studies. The manuscript has been amended to reflect this (see page 10).

Data analysis

Will you write authors to ask for them to compute intention to treat results and also compute them yourselves if not available?

-Authors will be contacted for intention to treat results, and if not available attempts will be made to compute them. The manuscript has been amended to reflect this (see page 11).

Study heterogeneity

Two other ways of assessing causes of heterogeneity are sensitivity analyses by RoB and meta-regression. Will you use these?

-Causes of heterogeneity will be explored via the conduct of subgroup analyses and sensitivity analysis via meta-regression. The manuscript has been amended to reflect this (see page 11).

ICC How will you assess if a study is similar enough to use its ICC results? This is a tricky issue.

-Similar studies will be compared with respect to their reported school and student characteristics (including gender and scholastic year proportions). The manuscript has been amended to reflect this (see page 11).

Reviewer 3:

Note to point 1. The effectiveness of school-based programs on tobacco, alcohol and drugs use have already been explored in 3 Cochrane reviews and several other SRs. The only point which makes the present protocol different from the others is the focus on intervention addressed to RESILIENCE. However, the definition of resilience is very broad, so the selection of studies based on this criteria won't be different from that applied by the other SRs. I suspect the final included studies will be the same, so this systematic review, despite a huge work, won't give the research community any new result. Moreover, the search strategy will replicate the work already done by someone else! Useless effort!

-Whilst it is acknowledged there will be some overlap in included studies between existing Cochrane reviews of any school-based programs on tobacco, alcohol and illicit drug use and the proposed review, we believe that there are multiple important differences:

1) This proposed review poses a different research question to the existing reviews, with the effectiveness of resilience interventions the primary outcome rather than secondary subgroup analysis of any type of intervention and aims to consolidate all available evidence across all substances. Based on the revised definition of included resilience interventions only a subset of studies included in existing Cochrane reviews will be included. For example it is estimated that approximately 30% of studies analysed in the existing tobacco review will be included, with social influences interventions that do not specifically address both an internal and external resilience factor excluded.

2) Given Medical Research Council [1] recommendations that non-randomised designs may represent the most appropriate evaluation design for some complex public health interventions, this review proposes that both randomised controlled trials and some non-randomised trials will be eligible for inclusion. This is in contrast to the existing Cochrane reviews on tobacco and alcohol programs that only include randomised controlled trials and as a result the proposed review will identify new studies not included in the existing tobacco and alcohol reviews.

3) The existing Cochrane reviews examining tobacco, alcohol and illicit substance use interventions have search end dates of October 2012, July 2010 and July 2004 respectively. As such, it is proposed that the current review will update the available literature with respect to the available evidence of resilience interventions in line with Cochrane recommendations[2] and will identify new studies that are not included in existing Cochrane reviews.

4) The intervention criteria has been updated to further differentiate the proposed review from existing Cochrane reviews, such that only universal interventions and those address both an internal and external resilience factor will be included in the proposed review.

Both a more detailed definition of included resilience interventions (see pages 6-7) and a description of the differences between the proposed review and existing reviews have been included in the updated manuscript (see pages 3-4).

Note to point 3. Since the work has already been done by other 3 or more research groups, I think the most cost/effective plan would be to contact these groups and make a collaborative study on it, first

examining if the definition of resilience interventions is able to select a part of the studies already included in the reviews; if yes, it will be justified to publish a SR on it. However, it won't be needed to start from the beginning (performing the search strategy) but simply re-examine the studies already included in the SRs. I'm sure the three research groups will be collaborative on it.

-As per response to 'Note to point 1' above, based on the definition of included interventions and inclusion criteria with respect to study design and updated search dates, the proposed review will identify new studies not analysed in the existing Cochrane reviews.

For example an intervention focused on enhancing internal and external resilience factors with outcomes inclusive of tobacco, alcohol and cannabis use by Bond et al[3] was included in the alcohol-focused review, but not in the tobacco- or illicit-focused review.

Note to point 14. It is likely to be redundant publication.

-As per response to 'Note to point 1' and 'Note to point 3', the proposed review whilst it will include a number of trials that have been included in existing Cochrane reviews, is designed to answer a different research question and consolidate all available existing evidence regarding whether a resilience intervention is effective in reducing adolescent substance use.

We believe this review will be an important addition and update to the existing literature given the emerging focus on universal resilience interventions as a way to reduce health risk behaviours and the lack of review research conducted to date to examine this. The answer to this specific research question is predicted to be of direct interest to a large number of both health and education researchers and policy makers.

## REFERENCES

1. Medical Research Council. Developing and evaluating complex interventions: new guidance. 2008.
2. Higgins JPT, Green S. Cochrane Handbook for Systematic Reviews of Interventions. Version 5.1.0 [updated March 2011]. Higgins JPT, Green S, editors. The Cochrane Collaboration, 2011. 2011.
3. Bond L, Patton G, Glover S et al. The Gatehouse Project: can a multilevel school intervention affect emotional wellbeing and health risk behaviours? *Journal of Epidemiology & Community Health* 2004; 58(12):997-1003.