Title:

The effects of public health policies on health inequalities in high-income countries: an umbrella review

Appendices:

Appendix S1: PRISMA checklist

Appendix S2: Search strategy

Appendix S3: Example data extraction form

Appendix S4: AMSTAR rating for all included studies

Appendix S5: Reasons for exclusion of full-text articles
### Appendix S1: PRISMA 2009 checklist

<table>
<thead>
<tr>
<th>Section/topic</th>
<th>#</th>
<th>Checklist item</th>
<th>Reported on line #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TITLE:</strong></td>
<td></td>
<td>The effects of public health policies on health inequalities in high-income countries: an umbrella review</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>1</td>
<td>Identify the report as a systematic review, meta-analysis, or both.</td>
<td>31-32</td>
</tr>
<tr>
<td><strong>ABSTRACT</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Structured summary</td>
<td>2</td>
<td>Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.</td>
<td>24-45</td>
</tr>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rationale</td>
<td>3</td>
<td>Describe the rationale for the review in the context of what is already known.</td>
<td>62-79</td>
</tr>
<tr>
<td>Objectives</td>
<td>4</td>
<td>Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).</td>
<td>128-151</td>
</tr>
<tr>
<td><strong>METHODS</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Protocol and registration</td>
<td>5</td>
<td>Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.</td>
<td>97-99</td>
</tr>
<tr>
<td>Eligibility criteria</td>
<td>6</td>
<td>Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.</td>
<td>103-151</td>
</tr>
<tr>
<td>Information sources</td>
<td>7</td>
<td>Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.</td>
<td>103-113</td>
</tr>
<tr>
<td>Search</td>
<td>8</td>
<td>Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.</td>
<td>Appendix S2</td>
</tr>
<tr>
<td>Study selection</td>
<td>9</td>
<td>State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).</td>
<td>154-163 Figure 2</td>
</tr>
<tr>
<td>Data collection process</td>
<td>10</td>
<td>Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.</td>
<td>156-163</td>
</tr>
<tr>
<td>Data items</td>
<td>11</td>
<td>List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.</td>
<td>Appendix S3</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>----</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Risk of bias in individual studies</td>
<td>12</td>
<td>Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.</td>
<td>168-181</td>
</tr>
<tr>
<td>Summary measures</td>
<td>13</td>
<td>State the principal summary measures (e.g., risk ratio, difference in means).</td>
<td>140-144</td>
</tr>
<tr>
<td>Synthesis of results</td>
<td>14</td>
<td>Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I²) for each meta-analysis.</td>
<td>NA</td>
</tr>
<tr>
<td>Risk of bias across studies</td>
<td>15</td>
<td>Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).</td>
<td>681-684</td>
</tr>
<tr>
<td>Additional analyses</td>
<td>16</td>
<td>Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.</td>
<td>NA</td>
</tr>
</tbody>
</table>

**RESULTS**

| Study selection                                | 17 | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram. | Figure 1    |
| Study characteristics                          | 18 | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations. | Tables 1-6  |
| Risk of bias within studies                    | 19 | Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12). | Appendix S4 |
| Results of individual studies                  | 20 | For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot. | Tables 1-6  |
| Synthesis of results                           | 21 | Present results of each meta-analysis done, including confidence intervals and measures of consistency. | NA          |
| Risk of bias across studies                    | 22 | Present results of any assessment of risk of bias across studies (see Item 15). | NA          |
| Additional analysis                            | 23 | Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]). | NA          |

**DISCUSSION**

<p>| Summary of evidence                            | 24 | Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers). | 475-651     |
| Limitations                                    | 25 | Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias). | 655-685     |</p>
<table>
<thead>
<tr>
<th>Conclusions</th>
<th>26</th>
<th>Provide a general interpretation of the results in the context of other evidence, and implications for future research.</th>
<th>689-709</th>
</tr>
</thead>
</table>

**FUNDING**

| Funding | 27 | Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review. | 745-747 |

Appendix S2: Search strategy

**Medline**
1 search*.tw.
2 (systematic adj2 (review* or overview*)).mp. or Systematic Review/
3 (meta analy* or metaanaly*).mp. or Meta Analysis/
4 (umbrella adj2 review).tw.
5 "review of reviews".tw.
6 1 or 2 or 3 or 4 or 5
7 ("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") adj8 (intervention$ or prevention or policy or policies or program$ or project$).tw.
8 (health adj8 (intervention$ or prevention or policy or policies or program$ or project$)).tw.
9 7 or 8
10 6 and 9
11 animals/
12 humans/
13 11 not (11 and 12)
14 10 not 13

**Embase**
1 search*.tw.
2 (systematic adj2 (review* or overview*)).mp. or Systematic Review/
3 (meta analy* or metaanaly*).mp. or Meta Analysis/
4 (umbrella adj2 review).tw.
5 "review of reviews".tw.
6 1 or 2 or 3 or 4 or 5
7 ("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") adj8 (intervention$ or prevention or policy or policies or program$ or project$).tw.
8 (health adj8 (intervention$ or prevention or policy or policies or program$ or project$)).tw.
9 7 or 8
10 6 and 9
11 animals/
12 humans/
13 11 not (11 and 12)
14 10 not 13

**Cumulative Index to Nursing and Allied Health Literature (CINAHL; EBSCOhost)**
1 AB search* OR TI search*
2 AB(systematic N2 (review* or overview*)) OR TI(systematic N2 (review* or overview*)) OR PT(Systematic Review)
3 AB(meta analy*) OR TI(meta analy*) OR AB(metaanaly*) OR TI(metaanaly*) OR PT(Meta Analysis)
4 AB(umbrella N2 review) OR TI(umbrella N2 review)
5 AB("review of reviews") OR TI("review of reviews")
6 S1 or S2 or S3 or S4 or S5
7 AB("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") N8 (intervention* or prevention or policy or policies or program* or project*) OR TI("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") N8 (intervention* or prevention or policy or policies or program* or project*))
PsycINFO (EBSCOhost)
1 AB search* OR TI search*
2 AB (systematic N2 (review* or overview*)) OR TI (systematic N2 (review* or overview*)) OR SU (Systematic Review)
3 AB(meta analy*) OR TI (meta analy*) OR AB(metaanaly*) OR TI (metaanaly*) OR DE (Meta Analysis)
4 AB (umbrella N2 review) OR TI(umbrella N2 review)
5 AB("review of reviews") OR TI("review of reviews")
6 S1 or S2 or S3 or S4 or S5
7 AB("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") N8 (intervention* or prevention or policy or policies or program* or project*)) OR TI(("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") N8 (intervention* or prevention or policy or policies or program* or project*))
8 AB(health N8 (intervention* or prevention or policy or policies or program* or project*)) OR TI(health N8 (intervention* or prevention or policy or policies or program* or project*))
9 S7 OR S8
10 S6 AND S9

Applied Social Sciences Index and Abstracts (ASSIA; ProQuest)
1 ab,ti(search*)
2 ab,ti(systematic NEAR/2 (review* or overview*)) OR SU.EXACT("Systematic reviews")
3 ab,ti(meta analy*) OR ab,ti(metaanaly*) OR SU.EXACT("Meta-analysis")
4 ab,ti(umbrella NEAR/2 review)
5 ab,ti("review of reviews")
6 1 OR 2 OR 3 OR 4 OR 5
7 ab,ti("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") NEAR/8 (intervention* or prevention or policy or policies or program* or project*)
8 ab,ti(health NEAR/8 (intervention* or prevention or policy or policies or program* or project*))
9 7 OR 8
10 6 AND 9

International Bibliography of the Social Sciences (IBSS; ProQuest)
1 ab,ti(search*)
2 ab,ti(systematic NEAR/2 (review* or overview*))
3 ab,ti(meta analy*) OR ab,ti(metaanaly*)
4 ab,ti(umbrella NEAR/2 review)
5 ab,ti("review of reviews")
6 1 OR 2 OR 3 OR 4 OR 5
7 ab,ti("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") NEAR/8 (intervention* or prevention or policy or policies or program* or project*)
8 ab,ti(health NEAR/8 (intervention* or prevention or policy or policies or program* or project*))
9 7 OR 8
10 6 AND 9
Sociological abstracts
1. ab,ti(search*)
2. ab,ti(systematic NEAR/2 (review* or overview*))
3. ab,ti(meta analy*) OR ab,ti(metaanaly*)
4. ab,ti(umbrella NEAR/2 review)
5. ab,ti("review of reviews")
6. 1 OR 2 OR 3 OR 4 OR 5
7. ab,ti("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") NEAR/8 (intervention* or prevention or policy or policies or program* or project*)
8. ab,ti(health NEAR/8 (intervention* or prevention or policy or policies or program* or project*))
9. 7 OR 8
10. 6 AND 9

Social Services Abstracts (ProQuest)
1. ab,ti(search*)
2. ab,ti(systematic NEAR/2 (review* or overview*))
3. ab,ti(meta analy*) OR ab,ti(metaanaly*)
4. ab,ti(umbrella NEAR/2 review)
5. ab,ti("review of reviews")
6. 1 OR 2 OR 3 OR 4 OR 5
7. ab,ti("population level" or "population based" or "population orientated" or "population oriented" or "community level" or "community based" or "community orientated" or "community oriented") NEAR/8 (intervention* or prevention or policy or policies or program* or project*)
8. ab,ti(health NEAR/8 (intervention* or prevention or policy or policies or program* or project*))
9. 7 OR 8
10. 6 AND 9

Prospero
1. population – ALL FIELDS
2. intervention – ALL FIELDS
3. health – ALL FIELDS
3. 1 AND 2 AND 3

The Campbell Library
1. (population level or population based or population orientated or population oriented or community level or community based or community orientated or community oriented) AND (intervention* or prevention or policy or policies or program* or project*) – ALL TEXT
2. health AND (intervention* or prevention or policy or policies or program* or project*) – ALL TEXT
3. 1 OR 2

Cochrane Library
1. (search*):ti,ab
2. (systematic near/2 (review* or overview*)):ti,ab
3. meta next analy* or metaanaly*:ti,ab
4. MeSH descriptor: [Meta-Analysis as Topic] explode all trees
5. MeSH descriptor: [Meta-Analysis] explode all trees
6. (umbrella near/2 review):ti,ab
7. ("review of reviews"):ti,ab
8. (or #1-#7)
9. {("population level" or "population based" or "population orientated" or "population oriented" or...}
"community level" or "community based" or "community orientated" or "community oriented")
near/8 (intervention* or prevention or policy or policies or program* or project*):ti,ab
(health near/8 (intervention* or prevention or policy or policies or program* or project*)):ti,ab
{or #9-#10}
#8 and #11

Social Science Citation Index (Web of Science)
1 TS=search*
2 TS=(meta analy*) OR TS=metaanaly*
3 TS=(systematic NEAR/2 (review* or overview*))
4 TS=(umbrella NEAR/2 review)
5 TS="review of reviews"
6 #1 OR #2 OR #3 OR #4 OR #5
7 TS=(("population level") or ("population based") or ("population orientated") or ("population oriented") or ("community level") or ("community based") or ("community orientated") or ("community oriented")) NEAR/8 ((intervention*) or (prevention) or (policy) or (policies) or (program*) or (project*))
8 TS=(health NEAR/8 (intervention* or prevention or policy or policies or program* or project*))
9 #7 OR #8
10 #6 AND #9

Database of Promoting Health Effectiveness Reviews (DoPHER; EPPI-Centre)
1 Freetext (All but Authors): search*
2 Freetext (All but Authors): "systematic" NEAR "review**"
3 Freetext (All but Authors): "systematic" NEAR "overview**"
4 Freetext (All but Authors): "meta analy**"
5 Freetext (All but Authors): metaanaly*
6 Freetext (All but Authors): "umbrella NEAR review"
7 Freetext (All but Authors): "review of reviews"
8 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7
9 Freetext (All but Authors): population
10 Freetext (All but Authors): community
11 9 OR 10
12 Freetext (All but Authors): intervention*
13 Freetext (All but Authors): prevention
14 Freetext (All but Authors): policy
15 Freetext (All but Authors): policies
16 Freetext (All but Authors): program*
17 Freetext (All but Authors): project*
18 12 OR 13 OR 14 OR 15 OR 16 OR 17
19 11 AND 18
20 Freetext (All but Authors): health
21 18 AND 20
22 19 OR 21
23 8 AND 22

Social Care Online (SCIE)
1 search* OR systematic review* OR systematic overview OR meta analy* OR metaanaly* OR umbrella review OR "review of reviews"
- ALL FIELDS
2 "population level" OR "population based" OR "population orientated" OR "population oriented" OR "community level" OR "community based" OR "community orientated" OR "community oriented"
- ALL FIELDS
3 intervention* OR prevention OR policy OR policies OR program$ OR project* - ALL FIELDS
4 1 AND 2 AND 3

Health Systems Evidence
1 ("population level" OR "population based" OR "population orientated" OR "population oriented" OR "community level" OR "community based" OR "community orientated" OR "community oriented") AND (intervention* OR prevention OR policy OR policies OR program$ OR project*)
## Appendix S3: Example extraction record

<table>
<thead>
<tr>
<th>Bibliographical details</th>
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</tr>
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<tbody>
<tr>
<td>Author</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>Link</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Review details</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Systematic review?</td>
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</tr>
<tr>
<td>Domain (see matrix) and Interventions</td>
<td></td>
</tr>
<tr>
<td>Population (any age/gender/location etc. restrictions)</td>
<td></td>
</tr>
<tr>
<td>Health outcome (morbidity/mortality only)</td>
<td></td>
</tr>
<tr>
<td>SES measure (e.g. gap or gradient, individual income, wealth, education, employment or occupational status, benefit receipt; as well as area-level economic indicators)</td>
<td></td>
</tr>
<tr>
<td>Number of relevant studies in review (total)</td>
<td></td>
</tr>
<tr>
<td>Number of databases searched</td>
<td></td>
</tr>
<tr>
<td>Time/language/country restrictions</td>
<td></td>
</tr>
<tr>
<td>Study design of included studies (e.g. RCTS, controlled prospective cohort, repeat cross sections)</td>
<td></td>
</tr>
<tr>
<td>Method of synthesis (meta-analysis or narrative)</td>
<td></td>
</tr>
<tr>
<td>Quality (as measured by systematic review authors)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Main findings</th>
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</thead>
<tbody>
<tr>
<td>For relevant studies in the review summaries:</td>
<td></td>
</tr>
<tr>
<td>Study No.</td>
<td>Author(s) of original publication¹</td>
</tr>
<tr>
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</table>

### Summary table

<table>
<thead>
<tr>
<th>Study</th>
<th>No. of relevant studies</th>
<th>Context (setting, country, search timeframe)</th>
<th>Intervention(s)</th>
<th>Summary of results</th>
<th>AMSTAR quality appraisal²</th>
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</thead>
</table>

### Summary paragraph

#### AMSTAR tool for assessing methodological quality of systematic reviews

<table>
<thead>
<tr>
<th>YES/NO/ Can't answer/NA</th>
<th>R-AMSTAR checklist³</th>
<th>R-AMSTAR points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was an ‘a priori’ design provided?</td>
<td>A. ‘a priori’ design design</td>
<td></td>
</tr>
<tr>
<td>The research question and inclusion criteria should be established before the conduct of the review. Note: Need to refer to a protocol, ethics approval, or pre-determined/‘a priori’ published research objectives to score a “yes.”</td>
<td>B. Statement of inclusion criteria C. PICO/PIDP research question (population, intervention, comparison, prediction, outcome)</td>
<td></td>
</tr>
<tr>
<td>If it satisfies 3 of the criteria →4</td>
<td>If it satisfies 2 of the criteria →3</td>
<td>If it satisfies 1 of the criteria →2</td>
</tr>
<tr>
<td>2. Was there duplicate study selection and data extraction?</td>
<td>A. There should be at least two independent data extractors as stated or implied B. Statement of recognition or awareness of consensus procedure for disagreements C. Disagreements among extractors resolved properly as stated or implied</td>
<td></td>
</tr>
<tr>
<td>There should be at least two independent data extractors and a consensus procedure for disagreements should be in place. Note: 2 people do study selection, 2 people do data extraction, consensus process or one person checks the other’s work.</td>
<td>If it satisfies 3 of the criteria →4</td>
<td>If it satisfies 2 of the criteria →3</td>
</tr>
</tbody>
</table>

¹ If there fewer than five studies that are relevant, these can be included in full here. However if there are more than five, studies should be grouped if interventions are similar.

² As detailed in protocol matrix table.

³ Include only high-income countries and/or additional EU-28 countries (Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Israel, Japan, Korea Republic, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom and United States and Bulgaria, Croatia, Cyprus, Latvia, Lithuania, Malta and Romania).

⁴ Disadvantage/gradient approach to inequality.

⁵ As measured by systematic review.

⁶ +, positive intervention effect so it reduces health-related outcomes in low-SES groups or reduces the SES gradient in health-related outcomes; 0, no intervention effect or no effect on SES gradient in health-related outcomes.

⁷ Derived from R-AMSTAR.

⁸ Please underline which criteria are achieved by the systematic review.
| 3. Was a comprehensive literature search performed? | A: At least two electronic sources should be searched.  
B: The report must include years and databases used (e.g., Central, EMBASE, and MEDLINE).  
C: Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.  
Note: If at least 2 sources + one supplementary strategy used, select “yes” (Cochrane register/Central counts as 2 sources; a grey literature search counts as supplementary). |
|-----------------------------|-----------------------------------------|
| 4. Was the status of publication (i.e. grey literature) used as an inclusion criterion? | A: The authors should state that they searched for reports regardless of their publication type.  
B: The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.  
Note: If review indicates that there was a search for “grey literature” or “unpublished literature,” indicate “yes.” SINGLE database, dissertations, conference proceedings, and trial registries are all considered grey for this purpose. If searching a source that contains both grey and non-grey, must specify that they were searching for grey/unpublished lit. |
| 5. Was a list of studies (included and excluded) provided? | A: Table/list/or figure of included studies, a reference list does not suffice.  
B: Table/list/figure of excluded studies (either in the article or in a supplemental source (i.e. online). (Excluded studies refer to those studies seriously considered on the basis of title and/or abstract, but rejected after reading the body of the text)  
C: Author satisfactorily/sexstated the reason for exclusion of the seriously considered studies.  
D: Reader is able to retrace the included and the excluded studies anywhere in the article bibliography, reference, or supplemental source |
| 6. Were the characteristics of the included studies provided? | A: In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.  
Note: Acceptable if not in table format as long as they are described as above. |
| 7. Was the scientific quality of the included studies assessed and documented? | A: 'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant.  
Note: Can include use of a quality scoring tool or checklist, e.g., Jadad scale, risk of bias, sensitivity analysis, etc., or a description of quality items, with some kind of result for EACH study (“low” or “high”) is fine, as long as it is clear which studies scored “low” and which scored “high”; a summary score/range for all studies is not acceptable).  
Characterized instrument is a created instrument that ranks the level of evidence, e.g. GRADE (Grading of Recommendations Assessment, Development and Evaluation.)
8. Was the scientific quality of the included studies used appropriately in formulating conclusions?
   The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.
   Note: Might say something such as "the results should be interpreted with caution due to poor quality of included studies." Cannot score "yes" for this question if scored "no" for question 7.

   A: If it satisfies 4 of the criteria → 4
   B: If it satisfies 3 of the criteria → 3
   C: If it satisfies 2 of the criteria → 2
   D: If it satisfies 1 or 0 of the criteria → 1

9. Were the methods used to combine the findings of studies appropriate?
   For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, Q). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e., is it sensible to combine)?
   Note: Indicate "yes" if they mention or describe heterogeneity, i.e., if they explain that they cannot pool because of heterogeneity/variability between interventions.

   A: Statement of criteria that were used to decide that the studies analyzed were similar enough to be pooled?
   B: For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e. Chi-squared test for homogeneity, Q).
   C: Is there a recognition of heterogeneity or lack of thereof
   D: If heterogeneity exists a "random effects model" should be used and/or the rationale (i.e. clinical appropriateness) of combining should be taken into consideration (i.e. is it sensible to combine?), or stated explicitly
   E: If homogeneity exists, author should state a rationale or a statistical test

   A: If it satisfies 4 or 5 of the criteria → 4
   B: If it satisfies 3 of the criteria → 3
   C: If it satisfies 2 of the criteria → 2
   D: If it satisfies 1 or 0 of the criteria → 1

10. Was the likelihood of publication bias assessed?
    An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test, Hedges-Olken).
    Note: If no test values or funnel plot included, score "no". Score "yes" if mentions that publication bias could not be assessed because there were fewer than 10 included studies.

    A: Recognition of publication bias or file-drawer effect
    B: An assessment of publication bias should include graphical aids (e.g., funnel plot, other available tests)
    C: Statistical tests (e.g. Egger regression test)

    A: If it satisfies 3 of the criteria → 4
    B: If it satisfies 2 of the criteria → 3
    C: If it satisfies 1 of the criteria → 2
    D: If it satisfies 0 of the criteria → 1

11. Was the conflict of interest included?
    Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.
    Note: To get a "yes," must indicate source of funding or support for the systematic review AND for each of the included studies.

    A: Statement of sources of support
    B: No conflict of interest. This is subjective and may require some deduction or searching
    C: An awareness/statement of support or conflict of interest in the primary inclusion studies

    A: If it satisfies 3 of the criteria → 4
    B: If it satisfies 2 of the criteria → 3
    C: If it satisfies 1 of the criteria → 2
    D: If it satisfies 0 of the criteria → 1

   TOTAL: Maximum 44

   Quality appraisal:
   Low = 11 - 22
   Medium = 23 - 33
   High = 34 - 44

---

Data extractor record

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### Appendix S4: AMSTAR rating for all included studies

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<th>1. Was an ‘a priori’ design provided?</th>
<th>2. Was there duplicate study selection and data extraction?</th>
<th>3. Was a comprehensive literature search performed?</th>
<th>4. Was the status of publication (i.e., grey literature) used as an inclusion criterion?</th>
<th>5. Was a list of studies (included and excluded) provided?</th>
<th>6. Were the characteristics of the included studies provided?</th>
<th>7. Was the scientific quality of the included studies assessed and documented?</th>
<th>8. Was the scientific quality of the included studies used appropriately in formulating conclusions?</th>
<th>9. Were the methods used to combine the findings of studies appropriate?</th>
<th>10. Was the likelihood of publication bias assessed?</th>
<th>11. Was the conflict of interest included?</th>
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**KEY**
- **Yes**
- **No**
- **Can't tell**
Appendix S5: Excluded articles

Detailed below are full references for all excluded articles. Reasons for exclusion are given at the start of each section. Articles are excluded for one of the following reasons (in order of hierarchical importance as set out below):

1. The paper is not a systematic review (in accordance with the DARE criteria).
2. The paper does not focus on high-income countries.
3. No state-led population health intervention is described.
4. No health outcomes of relevance are described.
5. Inappropriate study design used.
6. No health inequality data is presented.
7. Insufficient detail is given regarding interventions/outcomes/health inequality data.
8. Not a systematic review of primary studies.
9. Unable to locate

The paper is not a systematic review


Purcell KR, O'Rourke K, Rivis M: Tobacco control approaches and inequity--how far have we come and where are we going? *Health Promotion International* 2015, **30**(Suppl 2):ii89-101.


The paper does not focus on high-income countries.


Bright T, Felix L, Kuper H, Polack S: A systematic review of strategies to increase access to health services among children in low and middle income countries. BMC Health Services Research 2017, 17: 252.


No state-led population health intervention is described.


Bowie JV, Curbow BA, Garza MA, Dreyling EK, Benz Scott LA, McDonnell KA: **A review of breast, cervical, and colorectal cancer screening interventions in older women.** *Cancer Control* 2005, **12** Suppl 2:S8-69.


Brown T, Summerbell C: **Systematic review of school-based interventions that focus on changing dietary intake and physical activity levels to prevent childhood obesity: an update to the obesity guidance produced by the Natio.** *Obesity Reviews* 2009, **10**(1):110-141.


Cahill K, Lancaster T: **Workplace interventions for smoking cessation.** *Cochrane Database of Systematic Reviews* 2014(2).


Krogsbøll LT, PC KilirkGnjLGt: General health checks in adults for reducing morbidity and mortality from disease. Cochrane Database of Systematic Reviews 2012.


Moreira MT, Smith LA, Foxcroft D: Social norms interventions to reduce alcohol misuse in University or College students. *Cochrane Database of Systematic Reviews* 2009(3).


Inappropriate study design used


No health outcomes of relevance are described.


Mosdol A, Lidal IB, Straumann GH, Vist GE: **Targeted mass media interventions promoting healthy behaviours to reduce risk of non-communicable diseases in adult, ethnic minorities.** *Cochrane Database of Systematic Reviews* 2017(2).


Walter U, Krauth C, Wienold M, Dreier M, Bantel S, Droste S: **Interventions for increasing uptake in screening programmes.** *GMS Health Technology Assessment* 2006, **2**:Doc16.

Welsh J, Strazdins L, Ford L, Friel S, O'Rourke K, Carbone S, Carlon L: **Promoting equity in the mental wellbeing of children and young people: a scoping review.** *Health Promotion International* 2015, **30**:36-76.


Yang L, Sahliqvist S, McMinn A, Griffin SJ, Ogilvie D: **Interventions to promote cycling: systematic review.** *BMJ* 2010, **341**:c5293.
No health inequality data is presented.


DiFranza JR: Which interventions against the sale of tobacco to minors can be expected to reduce smoking? *Tobacco Control* 2012, 21(4):436.


Elliott B: Road safety mass media campaigns: a meta analysis. In: Federal Office of Road Safety (Canberra); 1993.


Heath GW, Brownson RC, Kruger J, Miles R, Powell KE, Ramsey LT: The effectiveness of urban design and land use and transport policies and practices to increase physical activity: a systematic review. Journal of Physical Activity & Health 2006, 3(Suppl1):S55-S76.


Ker K, Chinnock P: Interventions in the alcohol server setting for preventing injuries. *Cochrane Database of Systematic Reviews* 2008(3).


Krogsboll LT, PC KILrKGNjLGt: General health checks in adults for reducing morbidity and mortality from disease. *Cochrane Database of Systematic Reviews* 2012.


Nuffield Institute for Health (University of Leeds) and NHS Centre for Reviews and Dissemination (University of York): Preventing unintentional injuries in children and young adolescents. *Effective Health Care* 1996, **2**(5).


Stead LF, Lancaster T: Interventions for preventing tobacco sales to minors. *Cochrane Database of Systematic Reviews* 2005(1).


**Insufficient detail is given regarding interventions/outcomes/health inequality data.**


Hoffman SJ, Tan C: Overview of systematic reviews on the health-related effects of government tobacco control policies. BMC Public Health 2015, 15:744.


Unable to locate


Grilli R, Ramsay C, Minozzi S: **Mass media interventions: effects on health services utilisation.** Cochrane Database of Systematic Reviews 2002.


Towner E: **Health promotion in childhood and young adolescence for the prevention of unintentional injuries.** Health Education Authority 1996, London.