Effectiveness of interventions to improve the public’s antimicrobial resistance awareness and behaviours associated with prudent use of antimicrobials: a systematic review

Journal Item

How to cite:

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Version: Supplementary Material

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**Supplementary Table S1. An example of search strategy applied for MEDLINE database.**

**MEDLINE**

*Context*

<table>
<thead>
<tr>
<th>Step</th>
<th>Search String</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(superbug* OR superinfection*):ti,ab</td>
</tr>
<tr>
<td>2</td>
<td>MH “Superinfection”</td>
</tr>
<tr>
<td>3</td>
<td>(multiresistant OR multiresistance OR &quot;multi-resistant&quot; OR &quot;multi-resistance&quot; OR MDR OR MDRO OR AMR):ti,ab</td>
</tr>
<tr>
<td>4</td>
<td>((drug* OR multidrug OR “multi-drug” OR antimicrobial* OR “anti-microbial*” OR antiinfection* OR “anti-infection*” OR antibacterial* OR “anti-bacterial*” OR antibiotic* OR “anti-biotic*”) N4 (resistant OR resistance OR tolerant OR tolerance)):ti,ab</td>
</tr>
<tr>
<td>5</td>
<td>MH “Drug Resistance”</td>
</tr>
<tr>
<td>6</td>
<td>MH “Drug Resistance, Microbial+”</td>
</tr>
<tr>
<td>7</td>
<td>MH “Drug Resistance, Multiple+”</td>
</tr>
<tr>
<td>8</td>
<td>MH “Drug Tolerance”</td>
</tr>
<tr>
<td>9</td>
<td>(“r factor*” OR “resistant factor*”):ti,ab</td>
</tr>
<tr>
<td>10</td>
<td>MH “R Factors”</td>
</tr>
<tr>
<td>11</td>
<td>((antimicrobial OR “anti-microbial” OR antiinfection OR “anti-infection” OR antibacterial OR “anti-bacterial” OR antibiotic OR “anti-biotic”) N4 (stewardship)):ti,ab</td>
</tr>
<tr>
<td>12</td>
<td>MH “Anti-Infective Agents”</td>
</tr>
<tr>
<td>13</td>
<td>MH “Anti-Bacterial Agents”</td>
</tr>
<tr>
<td>14</td>
<td>OR/1-13</td>
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</tbody>
</table>

*Population*

<table>
<thead>
<tr>
<th>Step</th>
<th>Search String</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>(public OR population OR community OR citizen* OR household* OR resident* OR consumer* OR carer* OR caregiver* OR people OR adult* OR men OR women OR mother* OR father* OR parent* OR student* OR pupil* OR children OR adolescent* OR teenager*):ti,ab</td>
</tr>
<tr>
<td>16</td>
<td>MH “Caregivers”</td>
</tr>
<tr>
<td>17</td>
<td>MH “Men”</td>
</tr>
<tr>
<td>18</td>
<td>MH “Women”</td>
</tr>
</tbody>
</table>
MH “Parents”
MH “Fathers”
MH “Mothers”
MH “Students”
OR/17-22

**Intervention**

(intervention*):ti,ab

(training OR teaching OR education OR program* OR initiative* OR workshop* OR seminar* OR module* OR session* OR curriculum):ti,ab

MH “Teaching”
MH “Teaching Materials”
MH “Education”
MH “Models, Educational”
MH “Health Education”
MH “Education, Nonprofessional”
MH “Curriculum”

((written OR printed OR online OR oral OR dissem nat* OR provi*) N2 (information OR advice OR resource* OR material*)):ti,ab

(pamphlet* OR handout* OR poster* OR leaflet* OR newsletter* OR brochure* OR booklet* OR TV OR television OR radio OR marketing OR advertising OR publicity OR campaign* OR “mass media” OR “communication media” OR outreach OR computer* OR Internet OR online OR website* OR “social media” OR “social network”* OR Facebook OR Twitter OR tweet OR blog* OR SMS OR “short messaging service”* OR text* OR email* OR podcast* OR smartphone* OR ((mobile OR cell OR smart) N1 (phone* OR telephone* OR app* OR application*))):ti,ab

MH “Consumer Health Information”
MH “Health Promotion”
MH “Health Communication”
MH “Persuasive Communication”
MH “Public Health”
MH “Audio Visual Aids”
Outcomes

MH “Program Evaluation”

((behavior N3 (change* OR changing OR alter* OR modification* OR modify OR modifying OR modifies OR modified)) OR intention*):ti,ab

MH “Motivation”

MH "Intention"

( attitude* OR belief* OR view* OR opinion* OR expectation* OR "anticipation" OR regret" OR knowledge OR awareness OR "health literacy" OR "risk perception*" OR "perceived risk*" OR "perceived susceptibility" OR "illness perception*" OR "treatment perception*":ti,ab

MH “Attitude to Health”

MH “Health Knowledge, Attitudes, Practice”

MH “Health Literacy”

("perceived behavioral control" OR autonomy OR capacity OR "self-efficacy" OR competence OR confidence OR ability OR skill*):ti,ab

MH "Self Efficacy"

("perceived norm*" OR "injunctive norm*" OR "subjective norm*" OR "descriptive norm*" OR "moral norm*" OR "self-identity"):ti,ab

MH "Social Norms"

((medication* OR drug* OR antimicrobial* OR "anti-microbial*" OR antiinfection* OR "anti-infection*" OR antibacterial* OR "anti-bacterial*" OR antibiotic* OR "anti-biotic*") N4 (use OR used OR usage OR consumption OR purchase OR dispos* OR storage OR storing OR sharing OR shared OR expect* OR request*)):ti,ab
((inappropriat* OR irrational OR imprudent OR unnecessar* OR irresponsibl* OR misuse* OR improper* OR mistake* OR indiscriminat* OR suboptimum* OR bad OR overuse* OR excessiv* OR vary OR varied OR variation OR poor OR unsafe*) N4 (use OR usage OR utili?e OR treatment OR consumption OR purchas* OR dispos* OR storage OR sharing OR shared OR expectation* OR request*)):ti,ab

((appropriat* OR rational OR prudent OR judicious* OR optimal* OR correct OR proper* OR responsibl* OR safe* OR good OR decreas* OR limit* OR curb* OR minimi?e* OR minimal* OR lessen* OR curtail* OR abate* OR restrict* OR lower* OR discontinue* OR delay*) N4 (use OR usage OR utili?e OR treatment OR consumption OR purchas* OR dispos OR storage OR sharing OR shared OR expectation* OR request*)):ti,ab

MH "Drug-Seeking Behavior"

MH "Medication Adherence"

("self-car*" OR "self-manag*" OR "self-monitor*" OR "self-medicat"):ti,ab

MH "Self Care"

MH "Self Medication"

OR/50-70

Combination of all search strings

AND/14,23,49,71

Limit 72 to year 2000
Supplementary Table S2. Data extraction tool designed for the purpose of the study.

<table>
<thead>
<tr>
<th>Study ID</th>
<th>First author, year of publication</th>
<th>Country</th>
<th>Language</th>
<th>Settings</th>
<th>Aim(s)</th>
<th>Study design</th>
<th>Population</th>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
<th>Sample size (including power calculation &amp; statistical analysis)</th>
<th>Recruitment methods</th>
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<tr>
<td>Intervention content</td>
<td>Measure to ensure intervention fidelity</td>
<td>Comparator(s)/control</td>
<td>Theoretical framework employed in intervention design</td>
<td>Data collection methods</td>
<td>Validity of tools</td>
<td>Baseline data collected</td>
<td>Number of data collection points (pre-intervention)</td>
<td>Number of data collection points (post-intervention)</td>
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<tr>
<td>OUTCOMES</td>
<td>ANALYSIS</td>
<td>FINDINGS/RESULTS</td>
<td>COMMENTS/NOTES</td>
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<td>Primary outcome</td>
<td>Secondary outcome(s)</td>
<td>Statistical analysis</td>
<td>Other analyses</td>
<td>Participants (demographic characteristics)</td>
<td>Findings/results (primary outcomes)</td>
<td>Findings/results (secondary outcomes)</td>
<td>Limitations</td>
<td>Conclusions</td>
<td>Comments/notes</td>
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</table>
Supplementary Table S3. Excluded studies with rationale.

**Design other than RCT, NRT, CBA or NCBA study**


15. McCarthy M. Many US parents have poor understanding of proper antibiotic use, study finds. *BMJ (Online)* 2015; **351**: h4009.


Participants recruited from HC settings

1. Alden DL, Tice AD, Berthiaume JT. Investigating approaches to improving appropriate antibiotic use among higher risk ethnic groups. *Hawaii Med J* 2010; **69**: 260-263.


**Context other than AMR**


**Outcomes not related to AMR awareness antimicrobial stewardship**


Full text not available


Other

Conference abstract of already reviewed study

*Full text not available in English/inability to translate*


*Article that refers to already reviewed study*


*Protocol of already reviewed study*


*Majority (74.3%) of respondents were HC professionals*