Communication and dissemination strategies to facilitate the use of health-related evidence


CRD summary
The review concluded that there was a lack of comparative research to inform communication and dissemination of evidence to clinicians and the general public, including communicating the uncertainty of research evidence. The conclusions of the review reflect the limited data found. Despite restricted literature searches, this review was generally well conducted and its conclusions are likely to be reliable.

Authors' objectives
To compare the effectiveness of: communicating health-related evidence in various contents and formats to increase target audiences’ understanding and use of information; different approaches for disseminating evidence from those who develop it to those expected to use it; various ways of communicating uncertainty associated with evidence to different target audiences.

Searching
MEDLINE, The Cochrane Library, PsycINFO, and Web of Science were consulted. Searches were limited to papers published in English from 2000 up to March 2013, except studies on communicating uncertainty for which all studies after 1966 were considered. Search terms were reported. References lists of included studies and other relevant studies were handsearched. The authors did not search for grey/unpublished literature.

Study selection
Randomised controlled trials that included at least 100 participants were eligible for inclusion. Quasi-experimental and non-randomised studies on communicating uncertainty were also considered. Interventions had to communicate and disseminate information to clinicians, patients, and the general public (aged 19 years or older). Interventions delivered in prisons or schools were excluded. A wide range of outcomes related to disease prevention and treatment were eligible.

For the communication objective, eligible communication strategies included tailored communication, communication targeted at audience segments; use of narratives (anecdotal evidence); and message framing. Eligible studies had to compare two or more of the included communication strategies head to head.

For the dissemination objective, active dissemination strategies that aimed to spread evidence-based information via specific strategies and channels were eligible. Strategies aimed to increase the reach of information, increase people's motivation and/or ability to use and apply evidence. Eligible studies had to compare two or more of the included dissemination strategies head to head.

For the communicating uncertainty objective, any communication strategy used to communicate uncertainty related to the quality, net benefit, and generalisability of well-synthesised medical evidence was eligible.

For the first two objectives, interventions that communicated or disseminated evidence based on systematic review evidence or guidelines from governmental or professional bodies were eligible. Interventions that used evidence from government-supported research consortia based on systematic reviews and/or meta-analyses were also considered, as well as those based on evidence from guidelines in the National Guideline Clearinghouse. Interventions communicating uncertainty were eligible regardless of the type of evidence used.

Included studies that addressed the communication objective were mostly conducted in the USA. For the dissemination objective, studies were conducted in a wide range of countries, including the USA, Canada, UK, Germany, Finland, Holland and Spain. Interventions on communicating uncertainty were tested in the USA, Canada, and Switzerland. Not all included studies provided direct comparisons.

Two reviewers independently selected the studies. Disagreements were resolved through discussion or by a third reviewer.
Assessment of study quality
Each study was given a quality rating of low, medium, or high based on the following criteria: potential for selection bias (including attrition bias), measurement bias (such as performance bias, detection bias), confounding, power, and potential biases in reporting. Overall strength of the evidence was rated as high, moderate, low or insufficient based on the following four domains: risk of bias, consistency, directness and precision of the evidence. Applicability of the evidence to the review objectives was also assessed.

Two reviewers independently assessed the quality of the studies and of the evidence. Disagreements were resolved through discussion or by a third reviewer.

Data extraction
Outcomes data were extracted or calculated as absolute differences between intervention and control groups.

Data were extracted by one reviewer and checked by a second.

Methods of synthesis
Studies were synthesised narratively by objective (communication, dissemination, uncertainty). Key variables such as risk of bias, study size, and target audience were accounted for in the analyses. Studies with a high risk of bias were excluded from the analyses.

Results of the review

**Communication strategies** (seven studies; range 174 to 5,500 participants)

Strength of evidence was considered low or insufficient for all findings. Risk of bias was low for two studies and moderate for five.

Framing versus narratives: Loss-framed messages (such as emphasising what was lost by taking an action or making a choice) used with narratives were more persuasive than loss-framed messages in conjunction with statistical information alone or gain-framed messages in conjunction with either narratives or statistical information (one trial).

Framing versus targeting: The loss-framed message used in combination with non-targeting (a broader appeal either culturally or societally, such as a collectivist appeal) was most persuasive relative to any other combination of framing (conveying the same message in alternative ways) and targeting (designed for specific subgroups based on group membership or characteristics) (two trials).

Targeting versus tailoring: Evidence that compared targeting with tailoring (communication designed for an individual based on information from the individual) was mixed. There were no significant differences in outcomes between those receiving the targeted or tailored version of a communication intervention in two studies. In a third study, the targeted version was associated with a greater likelihood of self-reported screening compared with the tailored version. There were no statistically significant differences between targeting plus tailoring versus tailoring alone (one trial).

**Dissemination strategies** (38 studies; range 114 to 3,293 participants)

Multi-component strategies targeting clinicians that address a combination of reach, ability, or motivation were more effective than one strategy alone for affecting clinician behaviours, notably guideline adherence (seven trials; moderate strength of evidence). The strength of evidence was low or insufficient for most comparisons related to clinical outcomes and knowledge for clinicians.

Evidence on the benefit of reach, ability, motivation, or multi-component approaches for patients focused on changing health-related decisions and behaviours was inconsistent (12 trials; insufficient strength of evidence). Evidence was insufficient for determining the benefit of reach, ability, motivation, or multi-component approaches for patients for clinical outcomes (two trials; low or insufficient strength of evidence) and knowledge outcomes (three trials; insufficient strength of evidence).

Evidence was inconsistent on the benefit of reach, ability, motivation, or multi-component strategies that targeted both providers and patients for health-related decisions and behaviours (six trials) or clinical outcomes (one trial). Strength
of evidence was insufficient for strategies that target both providers and patients.

**Communicating uncertainty** (nine studies; range 120 to 2,944 participants)

Six RCTs, two quasi-RCTs and one non-controlled trial were included.

Precision: Studies on communicating precision of evidence found mixed effects of presenting numeric risks as point estimates versus 95% confidence intervals. Only a single small study examined the effects of changing the format in which 95% confidence interval were presented (numeric versus graphical) on perceived risk of colon cancer (insufficient strength of evidence). A single small study examined the effects of using clean versus blurry bar graphs to convey information about uncertainty (insufficient strength of evidence). One study found that consumers’ cholesterol medication choice was better when they received non-numeric advice or factual information which encouraged choice of a medication with direct evidence of benefit compared with usual care (one study, low strength of evidence).

Directness: Medication choice was better among participants who received non-numeric advice or factual information which encouraged consumers to choose a drug with greater net benefit than in patients who received usual care (one study; low strength of evidence). Receiving additional non-numeric information about benefits had little effect on refusals of cancer screening tests, but receiving more non-numeric information on harms significantly increased test refusals and significantly reduced decision satisfaction (one study; low strength of evidence).

Net benefit: Providing men with prostate cancer screening information alone or framed in the context of information about other more beneficial screening services significantly increased prostate cancer knowledge (one study; low strength of evidence) compared with usual care. However, providing prostate cancer screening information alone versus framed in the broader context of more beneficial services had differential effects on patient involvement and screening (two studies; insufficient strength of evidence).

Strength of recommendations: Only one small study provided insufficient evidence on the effectiveness of providing different ways of wording recommendations to convey strong or weak recommendations for care.

**Authors’ conclusions**

There was a lack of comparative research to inform communication and dissemination of evidence to clinicians, patients and the general public, including communicating the uncertainty of research evidence.

**CRD commentary**

The review addressed three explicit questions based on a transparent analytic framework. Selection criteria were clearly reported. A range of sources were consulted although searches were restricted by date, language and publication status. Attempts were made to minimise the risk of reviewer error and bias throughout the stages of the review.

The quality of the evidence was assessed using established tools. The evidence was generally considered poor or insufficient. The choice of a narrative synthesis appeared appropriate given the heterogeneity in the evidence. The conclusions of the review reflect the limited data found.

Despite restricted literature searches, the conclusions of the review are likely to be reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that the choice of a specific communication and/or dissemination strategy should account for factors affecting awareness, adoption, and use of evidence in various settings and by individuals working in or receiving services in those settings.

**Research:** The authors stated that the design of future relevant studies should rely more on accepted theoretical constructs and models. They stated future studies should conduct prior-needs assessments with target audiences and at least include an assessment of self-reported attitudes, levels of knowledge, and behaviours using a range of assessment tools. They stated that choices of outcomes should be better described and justified, and that future studies should apply more advanced statistical and analytic techniques to account for confounders, interactions, and similar complications in data. Further recommendations for research were reported.
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