Effectiveness of programs for reducing the stigma associated with mental disorders. A meta-analysis of randomized controlled trials

Griffiths KM, Carron-Arthur B, Parsons A, Reid R

CRD summary
This review concluded that stigma interventions reduced personal stigma, but high-quality research was required to improve the effectiveness of these interventions, and to determine if interventions to reduce perceived and internalised stigma could be effective. Limitations in the review processes, the reporting, and the evidence, mean that these conclusions may not be reliable.

Authors' objectives
To evaluate the effectiveness of interventions for reducing the stigma associated with mental disorders.

Searching
PubMed, PsycINFO and The Cochrane Library were searched in November 2012, for studies published in English. Search terms were reported.

Study selection
Eligible were randomised controlled trials (RCTs) evaluating the effectiveness of interventions to reduce the stigma associated with mental disorders. Trials that did not report changes in stigma were excluded, as were those of people with comorbid physical conditions, and those where participants, such as carers or parents, responded on the patient's behalf.

The included trials were conducted in Australia, the USA, Hong Kong, Russia, Turkey, Finland, or the UK (two RCTs). Personal or public stigma was most commonly measured. A few trials had more than one intervention group, stigma outcome or both. Most interventions were education, alone or with consumer contact, protest, cognitive-behavioural therapy or motivational interviewing. Delivery methods varied across the trials. Most controls were attention; others were no intervention, treatment as usual, or on a waiting list. The mean age of participants ranged from 14.7 to 65.4 years, and their disorders varied (reported in the paper).

One reviewer selected trials for inclusion, and second reviewer checked these decisions. Any discrepancies were resolved by discussion.

Assessment of study quality
The risks of performance, detection and selection bias were assessed, according to criteria adapted from the Cochrane Collaboration.

Two reviewers independently assessed these risks, with any discrepancies resolved by discussion.

Data extraction
All stigma outcomes were defined. Means and standard deviations for continuous outcomes, and frequencies for dichotomous outcomes, were extracted to calculate Cohen's d standardised mean differences and 95% confidence intervals; the calculations were reported.

Two reviewers independently extracted the data, with any discrepancies resolved by consensus.

Methods of synthesis
Cohen's d standardised mean differences and 95% confidence intervals were pooled, using random-effects meta-analysis. Statistical heterogeneity was assessed using $I^2$. Sensitivity analyses were performed by removing outliers, and by assessing only trials of education alone. Subgroup analyses were performed by intervention and by mental disorder. Publication bias was assessed using funnel plots, Duval and Tweedie's trim and fill method, and Egger's test.
Results of the review
Thirty-three RCTs were eligible for inclusion, and 23 of them (6,595 participants; based on table one) provided data for meta-analysis. Thirteen RCTs reported intention-to-treat analyses, with their remaining quality results being unclear. Where reported, follow-up ranged from one week to 12 months.

Personal stigma: This was defined as personal attitudes to people with a mental disorder. Across all types of disorder, interventions were statistically significantly more effective than controls (d=0.28, 95% CI 0.17 to 0.39; 19 RCTs; I²=51%); the result was similar when an outlying trial was removed (18 RCTs; I²=0). Subgroup and sensitivity analyses demonstrated the benefits of the interventions over controls; the between-group differences were not always statistically significant and the size of the effect varied.

Perceived stigma: This was defined as beliefs about the attitudes of others to people with a mental disorder. Across all types of disorder, no statistically significant difference in change in perceived stigma was found between intervention and control (six RCTs; I²=50%). All but one of the subgroup analyses had similar results. In the exception, control was associated with a greater reduction in perceived stigma than cognitive-behavioural therapy; this difference was not statistically significant (two RCTs; I²=0).

Internalised stigma: This was defined as a person's belief about their own mental disorder. No statistically significant difference in change in internalised stigma was found between intervention and control (three RCTs; I²=74%). All three trials delivered psychotherapy, such as cognitive-behavioural therapy or cognitive restructuring, for general mental illness or schizophrenia.

No evidence of publication bias was found. Further results were reported.

Authors' conclusions
The stigma interventions reduced personal stigma, but high-quality research was required to improve the effectiveness of these interventions, and to determine if interventions to reduce perceived and internalised stigma could be effective.

CRD commentary
The review question and exclusion criteria were clearly defined. Relevant databases were searched; the restriction to reports in English, means that some trials may have been missed. Efforts were made to minimise the risks of reviewer error and bias. The assessment of bias in the trials was relevant to their design.

Potential for bias was reported for the included trials, with those that did not provide data for meta-analysis. It was impossible to ascertain which trials had potential bias and whether they affected the reliability of the pooled findings. There were discrepancies in the numbers of included trials, between those reported in the text, the abstract, and those in tables. There was diversity across the included trials, but the statistical synthesis seemed appropriate and efforts were made to explore heterogeneity.

The authors' conclusions reflect the evidence presented, but limitations in the review processes, reporting, and the evidence, mean that these conclusions may not be reliable.

Implications of the review for practice and research
Practice: The authors stated that Internet delivered interventions could be effective in reducing stigma en masse.

Research: The authors stated that high-quality research was needed to evaluate the effectiveness of stigma reduction interventions for personal and internalised stigma, and for particular types of mental disorder (listed in the paper). Trials should investigate tailored interventions, and evaluate the effects of standalone education for schizophrenia and psychosis; consumer contact (alone or with education) for different mental disorders; and any differential effects of interventions for specific at-risk groups and settings, such as schools or workplaces.

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