Does expressive writing reduce health care utilization: a meta-analysis of randomized trials

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CRD summary
This review found that writing about stressful experiences reduced the number of doctor or clinic visits during follow-up in healthy people but not in samples defined by medical diagnoses or psychological criteria. The clinical significance of these findings is uncertain. The reliability of the review methods was unclear, consequently the author's conclusions should be interpreted with some caution.

Authors' objectives
To determine whether writing about stressful experiences affects health care utilisation (HCU).

Searching
MEDLINE, PsycINFO, UMI ProQuest Digital Dissertations and ERIC were searched up to December 2004; the search terms were reported. The search was limited to studies reported in the English language. Conference proceedings (2000 to 2004) of the American Psychological Association, the Society of Behavioral Medicine and the American Psychosomatic Society, and reference lists of relevant articles, were also searched. Authors of articles identified by the search were contacted for additional (e.g. unpublished or in-press) studies.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for the review.

Specific interventions included in the review
Eligible studies involved a stress- or trauma-based writing task. Interventions that involved both written and oral expression were excluded. The studies were required to include a neutral writing or no-writing control group. The interventions in most of the included studies involved three or four writing sessions of 10 to 30 minutes (typically 20 minutes) on consecutive days or spread over 1 to 3 weeks.

Participants included in the review
There were no inclusion criteria for the participants. The participants in the included studies were healthy people (predominantly students), patients with medical illnesses (fibromyalgia, asthma, irritable bowel syndrome, cancer or cystic fibrosis), or people with a psychological diagnosis or history of exposure to stress. The majority of the participants were women.

Outcomes assessed in the review
The studies were required to report a measure of HCU, for example the number of doctor or clinic visits (not self-reported symptoms, sick days or hospital visits) measured at least 4 weeks after the intervention. The studies were also required to report sufficient information to allow the treatment effect size (standardised mean difference) to be calculated. Most of the included studies assessed HCU from records or self-report, and the duration of follow-up ranged from 4 to 52 weeks.

How were decisions on the relevance of primary studies made?
The author did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Validity was assessed on the basis of: the percentage of participants randomised who were retained for follow-up; the method of randomisation stated; the presence of single- or double-blind conditions; explicit missing data strategy mentioned; and whether the study was published in a peer-reviewed journal. The author did not state how many...
reviewers performed the validity assessment.

**Data extraction**
The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction. Data on means and standard deviations (SDs) of changes in HCU, means and SDs of number of health care visits at follow-up adjusted for baseline differences in the outcome, or unadjusted means and SDs of number of health care visits at follow-up (in that order of preference) were used to calculate a standardised mean difference (Hedges's g effect size) and associated 95% confidence interval (CI) for each study.

**Methods of synthesis**

*How were the studies combined?*
The studies were combined by meta-analysis using a random-effects model. For the group of studies of healthy people, publication bias was assessed by calculating a 'fail-safe n' (number of unpublished studies with non significant results required to make the combined effect size non significant).

*How were differences between studies investigated?*
Statistical heterogeneity was assessed using the Q statistic. Regression models were used to investigate the effects of various study characteristics on estimates of effect size.

**Results of the review**
Thirty RCTs (n=2,506) were included, of which fourteen (n=1,520) involved healthy participants, six (n=357) involved people with medical diagnoses, and 10 (n=629) involved psychologically defined samples.

The combined effect size for the studies of healthy people was 0.16 (95% CI: 0.02, 0.31), indicating a statistically significant reduction in HCU in the intervention group. One study with a very large effect size was omitted from the meta-analysis. Statistical heterogeneity was not significant and the 'fail-safe n' value was 10. Combined effect sizes for the medical (g=0.21, 95% CI: -0.02, 0.43) and psychological (g=0.06, 95% CI: -0.12, 0.24) groups were not statistically significant. Regression modelling indicated that within the studies of healthy people, increases in the number of participants completing the study and writing outside the laboratory were significantly associated with lower effect size estimates. Within studies of psychological patients an increased number of intervention sessions was significantly associated with lower effect sizes. Methodological quality characteristics were not significant moderators of effect size.

**Authors’ conclusions**
Writing about stressful experiences reduces HCU in healthy people, but not in samples defined by medical diagnoses or exposure to stress or other psychological factors.

**CRD commentary**
The review addressed a clear question and inclusion criteria for the interventions, outcomes and study designs were clear. There were no specific inclusion criteria for the participants but studies with similar participants were grouped together for analysis. The author searched a range of relevant sources and made some effort to locate unpublished studies. However, the search was limited to studies reported in English, thus raising the possibility of language bias in the review. The validity of the included studies was assessed and the results used in the analysis. However, the results of this assessment were not reported, which makes it difficult to assess the quality of the included studies (and hence the synthesis derived from them). The methods used to select studies and extract the data were not reported, so the risk of bias and errors during the review process cannot be assessed.

Adequate details of the included studies were reported in the tables and text. Differences between the studies were investigated. Statistical heterogeneity between studies grouped together for meta-analysis was not significant, which provides some support for the author's decision to synthesise studies in this way. Most studies of healthy people involved college students and the findings may not be generalisable to other populations; also, as the author pointed out,
the clinical significance of changes in HCU is unclear. The author's conclusions follow from the evidence presented, but should be interpreted with some caution in view of the limitations mentioned.

Implications of the review for practice and research
Practice: The author did not state any implications for practice.

Research: The author stated that expressive writing interventions should be tested in samples for which the meaning of changes in HCU can be assumed, for example known over- or under-users of health care. Future studies should assess health outcomes in addition to HCU and examine the relationship between changes in HCU and changes in health.

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