Review: depression is associated with increased cancer mortality

QUESTION

Question: Are there associations between depression and mortality of cancer patients and do these vary dependent on the study characteristics?

Outcomes: RR ratio for depression and cancer mortality.

METHODS

Design: Systematic review and meta analysis.

Data sources: Medline, Cochrane Data Base, PsychLit, and PSYNDEX were searched for relevant studies.

Study selection and analysis: Criteria for inclusion in the meta analysis were studies including cancer patients or prospective community-based studies reporting cancer mortality; depressive disorders diagnosed according to ICD-10 *DSM-III, III-R* or IV; or depressive symptoms assessed with self-rating scales or interviewer ratings. Also, statistics could be calculated or estimated for associations between depression and mortality. RR were calculated for each study and pooled using random-effects models. Heterogeneity was assessed using the Q statistic. Analyses were carried out to look at the effects of potential moderator variables.

MAIN RESULTS

A total of 76 studies met inclusion criteria (176 863 participants); 26 studies included patients with cancer at various sites, and the remainder looked at specific cancer sites. Most studies (n=62) assessed depression after cancer diagnosis, and the remainder looked at depression before cancer diagnosis. Overall, there was an association between depression and increased risk of cancer mortality (RR 1.17, 95% CI 1.12 to 1.22). This association was seen both in studies that controlled for confounding factors and those that did not (studies that controlled for confounding: RR 1.22, 95% CI 1.14 to 1.30; studies not controlled for confounding: RR 1.19, 95% CI 1.13 to 1.25). Effect sizes did not differ between studies that assessed depression after- versus before-cancer diagnosis, or between studies assessing depression diagnosis and those assessing level of depression. The length of interval between assessment of depression and survival affected the strength of association between depression and mortality. The strongest associations were found in studies with the shortest time interval between assessments. The association was weaker, but still significant in younger samples (age <55 years).

CONCLUSIONS

Depression is associated with an increased risk of cancer mortality in cancer patients and those who go on to develop cancer.

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Through meta-analysis, Pinquart and Duberstein have further solidified the importance of psycho-oncology in the treatment of cancer patients by contributing to the growing evidence linking depression with unfavourable cancer outcomes. The analysis yielded results consistent with those from our recent meta-analysis[1] but with less stringent inclusion criteria, thus drawing on a larger dataset.

The expansion of the dataset has allowed for some examination of moderating variables, which is a largely understudied and welcome addition to this literature. Age and cancer stage emerged as potential moderators for further investigation. The authors also highlight the non-significant results yielded from the studies using the Beck Depression Inventory (BDI) compared to those that used other self-report measures, hypothesising that the difference may be due to the relatively high proportion of somatic items composing the instrument. Because this explanation contrasts with the expectation that somatic symptoms are a proxy for disease severity, thereby bolstering the association between depression scores and cancer mortality, sample size may be a more viable explanation of the differences found in depression measures. As the authors point out, the analysis of moderators of the relationship of depression and mortality is in its early stages and is restricted by inadequate reporting and limited sample size. Future studies that allow for the testing of moderator variables will be useful in understanding this relationship.

Pinquart and Duberstein have thoroughly synthesised a large body of evidence to demonstrate that depression predicts mortality in cancer patients. To overlook their suggestion for psychological screening would be to miss an important opportunity. Because psychosocial treatment is effective in reducing distress only when initial distress is elevated,[2] routine psychological screening optimises treatment benefit and long-term cost savings, by identifying individuals early and efficiently. The Psychosocial Screen for Cancer[3] (PSSCAN) is a good example of a screening tool that addresses practical barriers to psychosocial screening. It is a brief, but thorough, psychometrically sound instrument validated within a clinical context. The integration of psychosocial treatment in a medical model is not only helpful to patients, but, as continues to be demonstrated, efficient and evidence based.

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Competing interests None.

REFERENCES

1. **Satin JR**, Linden W, Phillips, MJ. Depression as a predictor for disease progression and mortality in cancer patients: a meta-analysis. *Cancer* 2009;**22**:5349–61.
2. **Linden W**, Satin JR. Avoidable Pitfalls in behavioral medicine outcome research. *Ann Behav Med* 2007;**33**:143–7.
3. **Linden W**, Yi D, Barroetavena MC, MacKenzie R, Doll R. Development and validation of a psychosocial screening instrument for cancer. *Health Qual Life Outcomes* 2005;**3**:54–61.