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**Depressive symptoms among women with endometriosis:
a systematic review and meta-analysis.**

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Abstract

OBJECTIVE:

To evaluate whether endometriosis is associated with depressive symptoms, and whether the association is modulated by pelvic pain.

DATA SOURCES:

PubMed, Embase, PsychINFO, and the Cochrane Library, were systematically searched through September 2017.

STUDY ELIGIBILITY CRITERIA:

The following eligibility criteria applied: full-text original article; quantitative data about depressive symptoms or depression; comparing women with and without endometriosis, or women with endometriosis with and without pelvic pain. Articles reporting duplicated data were excluded.

STUDY APPRAISAL AND SYNTHESIS METHODS:

Two reviewers selected and reviewed the studies. Disagreements were resolved through discussion or a third opinion. Qualitative synthesis was performed through tabulation and assessment using a modified version of the Newcastle-Ottawa Scale. Effect sizes were pooled through meta-analysis and moderator analyses were performed to identify potential confounders with several variables: region of the sample, method of ascertainment of endometriosis, method of measurement of depression, year of publication, quality score.

RESULTS:

A meta-analysis of 24 studies (99,614 women) showed higher levels of depression among women with endometriosis compared to controls (standardized mean difference [SMD] =0.22, 95%CI:0.12-0.32). The heterogeneity in this analysis ($I^2=68\%$) was not explained by any of the moderating variables. When only healthy controls were considered, a larger endometriosis-depression effect was found (11 studies, SMD=0.49, 95%CI:0.24-0.73; $I^2=69\%$). Endometriosis patients reporting pelvic pain had significantly higher levels of depression compared to those without pain (4 studies, SMD=1.01, 95%CI:0.71-1.31; $I^2=0\%$). No significant difference was found between women with pelvic pain and endometriosis and those with pelvic pain but without endometriosis (11 studies, SMD=-0.11, 95%CI:-0.25-0.04; $I^2=0\%$).

CONCLUSIONS:

The association between endometriosis and depressive symptoms is largely determined by chronic pain but may also be modulated by individual and context vulnerabilities. Awareness of the complex relationship between endometriosis and depressive symptoms informs tailored care and patient-centred research outcomes.

KEYWORDS:

chronic pelvic pain; depression; endometriosis; mental health; meta-analysis; patient-centred care; reproductive health; systematic review