

Which psychological risk factors are associated with pregnancy-related lumbopelvic pain? A systematic review

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Background



Pregnancy-related lumbopelvic pain (PLPP)

- 86% of pregnant women
- Current treatments are not effective
- Multifactorial etiology → Several risk factors identified



Psychological risk factors?

- Previous reviews have important limitations
- Timing not considered



Aim

To provide an overview of psychological risk factors for PLPP across the preconception, prenatal, and postpartum stages, with a focus on longitudinal studies using multivariable analyses.

Methods

PROSPERO: CRD42025630798

Search strategy: 5 databases + reference lists, up to July 2025

Eligibility criteria:

- Prospective observational studies
- Association between psychological factor (measured first) and PLPP outcome (measured later)
- Women in preconception, prenatal, and postpartum stages assessed for non-specific PLPP

Quality assessment: QUIPS tool

Certainty of evidence: GRADE criteria



Results

- 13 prospective cohort studies
 - 2010 – 2023
 - Risk of bias: 9 moderate, 4 high
- 13 psychological factors assessed
 - Various questionnaires used
- 6 different PLPP outcomes
- Very low certainty of evidence for most associations
- Mixed results across relationships assessed in >1 study
- No assessments in the preconception stage

- Risk factor
- No risk factor
- Inconsistent results

	Presence of PLPP	PLPP intensity	Disability	PLPP interference	PLPP frequency	PLPP provocation
	<ul style="list-style-type: none"> ■ Emotional distress ■ Depression ■ Anxiety ■ Previous psychological difficulties 	<ul style="list-style-type: none"> ■ Pain catastrophizing ■ Emotional distress ■ Depression ■ Pain-related fear 	<ul style="list-style-type: none"> ■ Perceived stress ■ Anxiety ■ Coping ■ Pain-related fear ■ Emotional distress 	<ul style="list-style-type: none"> ■ Depression ■ Pain catastrophizing 		<ul style="list-style-type: none"> ■ Depression
	<ul style="list-style-type: none"> ■ Neuroticism ■ Extraversion ■ Conscientiousness ■ Openness ■ Agreeableness ■ Depression ■ Anxiety ■ Coping ■ Emotional distress ■ Pain catastrophizing ■ Pain-related fear 	<ul style="list-style-type: none"> ■ Emotional distress ■ Pain-related fear 	<ul style="list-style-type: none"> ■ Emotional distress ■ Pain-related fear 			
	<ul style="list-style-type: none"> ■ Emotional distress ■ Depression ■ Anxiety 	<ul style="list-style-type: none"> ■ Anxiety ■ Pain-related fear 	<ul style="list-style-type: none"> ■ Anxiety ■ Pain-related fear 		<ul style="list-style-type: none"> ■ Anxiety ■ Pain-related fear 	

Strengths & limitations

Strengths:

- Systematic search across 5 databases
- Prospective cohort studies only
- Explicit focus on timing of psychological assessment
- Inclusion of psychological factors not covered in previous reviews

Limitations:

- Few studies per psychological factor – PLPP relationship
- Methodological heterogeneity precluded meta-analysis
- No distinction between PLPP development and persistence

Conclusion

- Evidence for prenatal and postpartum psychological risk factors for PLPP remains inconclusive
- No evidence for the preconception stage
- Future research should:
 - Use standardized assessment tools
 - Include preconception and pre-symptom assessments
 - Comprehensive psychological profiling alongside known risk factors
- Early screening of psychological risk factors may be considered within a biopsychosocial, multidisciplinary framework



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