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## **Association between cardiovascular diseases and chronic musculoskeletal pain: a systematic review with meta-analysis.**

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Introduction: Chronic musculoskeletal pain imposes a substantial economic burden to society in recent times. However, this condition may contribute to even worse consequences to the health care systems and individuals. According to the model proposed by McBeth (2007), functional limitations in association with psychological distress of pain might induce physical inactivity in people with chronic musculoskeletal pain which increases the risk of cardiovascular disease. Therefore, the aim of this systematic review will be to investigate the association between cardiovascular diseases and chronic musculoskeletal pain. Methods: Population-based studies reporting the prevalence of cardiovascular comorbidities in adults with chronic musculoskeletal pain were considered eligible. A comprehensive literature search was performed in five electronic databases. Two independent reviewers assessed the records according to the inclusion criteria, extracted the data, and evaluated the risk of bias. The pooled estimates of risk ratios were calculated using random effect models. Results: We included fifteen studies in this review. The included studies were mostly conducted on North America and Europe. Four studies were judged as having low risk of bias and eleven studies were judged as having moderate risk of bias. Pooled estimates revealed that individuals with chronic musculoskeletal pain have an increased risk of having any cardiovascular diseases, congestive heart failure, and heart attack. Conclusion: Our findings reveal an association between cardiovascular diseases and chronic musculoskeletal pain. Future policies should stimulate preventive and management strategies focusing on promotion of physical activity that also address cardiovascular diseases and associated risk factors in patients with chronic musculoskeletal pain.