

Effectiveness of nurse-led interventions to manage hypertension and lifestyle behaviour effectively: a systematic review and meta-analysis

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Background: Hypertension is a leading risk factor in the development and worsening of cardiac arrhythmias, in particular atrial fibrillation. Practice guidelines recommend an integrated management approach which includes multidisciplinary teams.

Aim: to investigate the role of nurses in the management process, and to evaluate the effectiveness of nurse-led interventions on hypertension management, lifestyle behaviour and associated patient knowledge.

Methods: A systematic review with meta-analysis was conducted following Joanna Briggs Institute (JBI) guidelines. MEDLINE (Ovid), Emcare (Ovid), CINAHL (EBSCO), Cochrane library and ProQuest (Ovid) were searched from inception to February 2022. Randomised controlled trials (RCTs) examining the effect of nurse-led interventions on hypertension management were identified. Title and abstract, and full text screening, assessment of methodological quality, and data extraction were conducted by two independent reviewers using JBI (Joanna Briggs Institute) tools. A statistical meta-analysis was conducted using RevMan version 5.4.1.

Results: A total of 37 RCTs and 9,731 participants were included. The overall pooled data demonstrated nurse-led interventions significantly improved systolic blood pressure (MD -5.39; 95% CI -7.59, -3.34; I² = 81.33; 23 RCTs; moderate certainty evidence) and diastolic blood pressure (MD -1.94 95% CI -3.27, -0.60; I² = 79.66; 22 RCTs; moderate certainty evidence) compared to usual care. The duration of interventions contributed to the magnitude of blood pressure reduction. Nurse-led interventions effectively modified diet and physical activity, but the effect on smoking and alcohol consumption was inconsistent.

Conclusion: This review revealed beneficial effects of nurse-led interventions in hypertension management compared to usual care. Integration of nurse-led interventions in routine hypertension treatment and prevention services could play an important role in alleviating the rising global burden of hypertension and conditions it may be associated with.