

Self-management interventions to reduce urgent healthcare use in patients with Asthma: a systematic review and network meta-analysis

Alexander Hodkinson¹, Peter Bower¹, Christos Grigoroglou¹, Salwa Zghebi¹, Evangelos Kontopantelis¹, Hilary Pinnock², Maria Panagioti¹

¹University of Manchester, Centre for Primary Care, United Kingdom. ²Usher Institute of Population Health Sciences and Informatics, United Kingdom

Abstract

Background: Asthma is one of the most common, burdensome, and costly long-term chronic conditions worldwide. National and international guidelines, recommend that people with asthma be treated with self-management interventions (SMIs), which vary and involve diverse components. Therefore, we aimed to compare and rank the effects of SMI components for asthma participants in a network meta-analysis (NMAs).

Method: Searches were performed from January 2000 onwards. The SMIs were classified into the six components: Case Management (CM), Intensive Self-management (ISM), Support and Pure self-management, education usual care, Usual care. A predefined set of covariates were examined through network meta-regressions for outcomes unscheduled healthcare use (UHU) and quality of life (QoL). Standardised mean differences (SMDs) and 95% CrIs were estimated using Bayesian NMAs. Heterogeneity, consistency and inconsistency analysis were assessed.

Results: 105 RCTs (60 adults and 45 adolescents/children) comprising 27,731 participants were eligible. For UHU, both CM (SMD=-0.18, 95% CrI: -0.32 to -0.05) and ISM (SMD=-0.30, 95% CrI: -0.46 to -0.15) were significantly better than other SMIs, and compared to usual care. For patient QoL, only ISM (SMD = 0.54, 95% CrI: 0.11 to 0.96) showed a significant increase compared to usual care. In contrast, for trials including children and adolescents, only ISM was significant (UHC: SMD=-0.21, 95% CrI: -0.40, -0.03; QoL: SMD=0.23, 95% CrI: 0.03, 0.48).

Conclusion: We provide the most comprehensive and rigorous assessment of SMIs in Asthma. Intensive self-management interventions were the most efficacious SMIs for both outcomes. The results will inform guidance and policy makers on the relative merits of different modalities for SMIs in asthma.

Patient and Public Involvement (PPI)

PPI work to be included at later stage with PRIMER at UoM