

47th Annual Scientific Meeting of the Nutrition Society of Australia and Nutrition Society of New Zealand, 28 November – 1 December 2023, Nutrition & Wellbeing in Oceania

## Barriers and enablers to a healthy lifestyle in people with infertility: a mixed-methods systematic review

S. Torkel<sup>1</sup>, R. Wang<sup>2</sup>, R. Norman<sup>3</sup>, L. Zhao<sup>4</sup>, K. Liu<sup>4</sup>, L. Moran<sup>1</sup> and S. Cowan<sup>1</sup>

<sup>1</sup>Monash Centre for Health Research and Implementation, Monash University, Clayton, 3168, Australia

<sup>2</sup>Department of Obstetrics and Gynaecology, Monash University, Clayton, 3168, Australia

<sup>3</sup>Robinson Research Institute, The University of Adelaide, Adelaide, 5000, Australia

<sup>4</sup>Adelaide Medical School, The University of Adelaide, Adelaide, 5000, Australia

While there is a recognised role of optimising lifestyle behaviours such as diet and physical activity in the management of infertility, the best practice for lifestyle management of infertility remains unknown, and factors influencing the lifestyle behaviours of people with infertility are not well understood. The aim of this systematic review is to evaluate the barriers and enablers to a healthy lifestyle in people with infertility, from the perspectives of people with infertility and health professionals, in order to inform optimal behavioural change strategies for lifestyle management of infertility. Ovid MEDLINE(R), PsycINFO, EMBASE, EBM Reviews, and CINAHL Plus were searched from inception to 12th September 2022. Eligible studies were qualitative, quantitative or mixed-methods primary studies which explored barriers and/or enablers to lifestyle for infertility management, from the perspectives of people with infertility and/or health professionals. Two independent reviewers performed quality assessment, using the Centre for Evidence-Based Management Critical Appraisal of a Survey Tool (quantitative and mixed-methods studies) and the Critical Appraisal Skills Programme Qualitative Checklist (qualitative and mixed-methods studies). Data were analysed by inductive thematic analysis with themes mapped to the Capability, Opportunity, Motivation and Behaviour (COM-B) model<sup>(1)</sup> and Theoretical Domains Framework (TDF)<sup>(2)</sup>. Relevant behaviour change techniques (BCTs)<sup>(3)</sup> to target the identified enablers and barriers were suggested. After screening 10703 citations and 82 full-texts, 22 studies were included (12 quantitative, 7 mixed-methods and 3 qualitative) with 18 studies including women with infertility (n = 2442), 10 including men with infertility (n = 1372) and 6 including health professionals (n = 261). From the perspectives of people with infertility, themes related to capability (e.g. strategies for behaviour change), opportunity (e.g. limited time, resources and money) and motivation (e.g. interplay between lifestyle and emotional state); themes mapped to 8 TDF domains. From the perspectives of health professionals, themes related to capability (e.g. identification of patients appropriate for lifestyle intervention), opportunity (e.g. mode of delivery) and motivation (e.g. professional responsibility); themes mapped to 6 TDF domains. 34 BCTs were identified across the suggested interventions. This systematic review found that several interacting factors influence lifestyle in people with infertility as well as health professional behaviour with regards to provision of lifestyle interventions for infertility. These factors can be targeted for optimisation of interventions. In light of the limited number of qualitative studies, there is a need for more qualitative research to gain deeper insights into the perspectives of people with infertility and health professionals for further exploration of the complex and interacting factors which shape lifestyle during the fertility journey.

**Keywords:** COM-B model; lifestyle behaviours; infertility; theoretical domains framework

### Ethics Declaration

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### Financial Support

No funding was obtained for this specific review. S.T. is supported by a Centre of Research Excellence Health in Preconception & Pregnancy (CRE HiPP) PhD Scholarship.

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