


BMJ Open Impact of menopause education interventions on knowledge, symptoms and quality of life: protocol for a systematic review

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ABSTRACT

Introduction The menopause transition is a critical period of life for women associated with a variety of symptoms that may impact health status and quality of life. Menopause education can improve menopause knowledge and self-efficacy, leading to the adaptation of self-management strategies that may reduce menopause symptom burden and enhance quality of life. The purpose of this review is to systematically evaluate the research on the effect of menopause education interventions among midlife women (age 35–55 years) on menopause knowledge, self-efficacy, symptoms and quality of life.

Methods and analysis This protocol is guided by the 2015 Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols. We will comprehensively search for articles published from all publication years through December 2024 in PubMed, Embase, CINAHL, PsycINFO, ProQuest Dissertation and Theses, and Scopus. The search strategy will include the following key terms and Medical Subject Headings terms: ‘menopause’, ‘menopausal’, ‘menopause transition’, ‘climacteric’, ‘health promotion’, ‘health education’ and ‘patient education’. Eligible studies will be experimental or quasi-experimental and include midlife women (age 35–55 years) who have received a menopause education intervention. Studies must report on the impact of menopause education interventions on menopause knowledge, self-efficacy, symptoms or quality of life. Only peer-reviewed articles and dissertations in English and Spanish will be included. Behavioural interventions (diet, physical activity, yoga) and medical interventions will be excluded. Two reviewers will independently perform data extraction and assess study quality/risk of bias with the Cochrane Risk of Bias tool for randomised experimental studies (RoB2) and the Risk of Bias in Non-Randomized Studies of Interventions tool (ROBINS-I). A narrative approach will be used to synthesise findings.

Ethics and dissemination Ethical approval is not required for this systematic review of published literature. Findings will be disseminated via peer-reviewed journal publications, presentations at professional scientific meetings and social media.

PROSPERO registration number CRD42024599106.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ A key strength of this review is that we will comprehensively search the literature, including six electronic databases and relevant doctoral dissertations.
- ⇒ This study will synthesise findings on the impact of menopause education on menopause knowledge and self-efficacy, which have not been reported in prior reviews and may be associated with symptom management, symptoms burden and quality of life.
- ⇒ We will use rigorous study quality/risk-of-bias assessment tools.
- ⇒ This study is limited to English and Spanish language peer-reviewed publications or dissertations, which may exclude pertinent literature in other languages.
- ⇒ This review will include experimental and quasi-experimental studies as well as multiple primary and secondary outcomes, which will introduce heterogeneity and not allow for a meta-analysis of the findings.

INTRODUCTION

Approximately 1.3 million women reach menopause each year in the USA.¹ This critical midlife stage is accompanied by many symptoms that can have a detrimental impact on quality of life,² including vasomotor symptoms (hot flashes, night sweats) and sleep disturbances.^{3,4} Nearly 70% of women report vasomotor symptoms during the menopause transition, and over half have trouble sleeping.^{5,6} In the Women Living Better online survey, nearly 80% of participants reported that menopause symptoms interfere with their daily activities and relationships.⁷ However, research has consistently shown that the onset, symptoms, severity and duration of the menopause transition are surprising to women.^{8,9} Furthermore, women report not knowing how to correctly access menopause information and not being aware of reliable sources of information.¹⁰

Adequate knowledge and positive attitudes towards menopause are crucial for women to manage changes related to menopause. However, over 60% of women feel unprepared for the physical and psychosocial changes associated with the menopause transition.¹¹ Greater knowledge about menopause has been linked to better symptom self-management and quality of life.^{2 12} Positive attitudes towards menopause and social support have also been associated with fewer reported vasomotor symptoms and sleep disturbances.¹³ Similarly, greater self-efficacy can lead to the adaptation of self-management strategies (eg, diet, physical activity, stress reduction, herbal supplements, hormone therapy) that may reduce menopause symptom burden and enhance health-related quality of life.^{14 15}

Group menopause education interventions have noted significant improvements in menopause knowledge, self-efficacy and symptom management among women aged 40–60 years.¹⁵ However, the design, setting and content of these programmes may vary greatly. While earlier literature reviews have evaluated the evidence of behavioural and medication-related intervention on menopause symptoms and quality of life,¹⁶ there is limited work synthesising the state of science on the impact of menopause education intervention. In addition, most reviews have excluded quasi-experimental studies and have not reported the potential effect on menopause knowledge and self-efficacy. Thus, this systematic review aims to critically evaluate and synthesise the literature on the impact of menopause education among midlife women (aged 35–55 years) on their menopause knowledge, self-efficacy, symptoms and quality of life.

METHODS AND ANALYSIS

This protocol is guided by the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P).¹⁷ This systematic review is registered in PROSPERO (CRD42024599106).

Information sources and search strategy

In consultation with an experienced health sciences librarian (JDB), we will comprehensively search the following electronic databases for articles published from all available publication years up to the end of December 2024: PubMed, Embase, CINAHL, PsycINFO, ProQuest Dissertation and Theses, and Scopus. The full details of the search strategy, reported based on a provisional search from August 2024, are shown in the online supplemental material. Briefly, the search strategy will include the following string of key terms and Medical Subject Headings: ‘menopause’, ‘menopausal’, ‘menopause transition’, ‘perimenopause’, ‘post-menopause’, ‘premenopausal’, ‘premature menopause’, ‘climacteric’, ‘health promotion’, ‘health education’, ‘menopause education’ and ‘menopause knowledge’. The search will be limited to English or Spanish language articles. A hand search of the reference lists of included articles will also be

conducted to retrieve any additional pertinent articles missed by the electronic search. All references will be imported into the Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia) for screening. The search strategy will be documented step-by-step to record the date of the searches in each database, the dates of coverage provided by each database, the search terms used in each database and the total number of publications found.

Eligibility criteria

Peer-reviewed articles and dissertations in English and Spanish, published up to the end of December 2024, will be eligible for inclusion in the systematic review. The inclusion of dissertations will ensure that we are considering all relevant menopause education interventions, which enhances the comprehensiveness of the systematic review and can reduce publication bias. Only studies that are experimental or quasi-experimental in design will be eligible for inclusion. In addition, articles must include midlife women aged 35–55 years who have received a menopause education intervention. Menopause typically occurs between the ages of 45 and 55 years, making it important to capture studies involving women who are in the early stages of the menopause transition or early postmenopausal, when menopause symptoms persist.¹⁸ Studies must report on the impact of the menopause education intervention on menopause knowledge, self-efficacy, symptoms or quality of life. The primary outcomes of interest in this review are menopause knowledge and self-efficacy, which can affect the secondary outcomes of menopause symptoms and quality of life. The intervention may be provided to women by any method (eg, in-person, online, brochures, group classes). Studies where the mean age is >60 years, or the majority of participants (>50%) are late postmenopausal (>5 years since the last menstrual period) will be excluded. We will also exclude observational studies, as well as studies that implemented behavioural (eg, diet, physical activity) or medical interventions. Moreover, menopause education interventions for healthcare providers will also be excluded from this review.

Study selection

The study selection will be conducted in Covidence (Veritas Health Innovation, Melbourne, Australia), a review-management software program, which is in partnership with Cochrane collaboration. All references will be imported into Covidence, and two reviewers (AM, YC) will independently conduct the title and abstract screening. Articles will be labelled by potential relevancy as ‘yes’, ‘no’ or ‘maybe’ based on eligibility criteria. Disagreements and articles labelled as ‘maybe’ will be discussed with a third reviewer (EL) to reach a consensus. Similarly, two authors (AM, YC) will independently review the full-text articles identified as potentially relevant during title and abstract screening. Articles will be labelled as ‘include’ or ‘exclude’ from the review. Disagreements

will be resolved through discussion with a third reviewer. A PRISMA flow chart will be used to present the details of the selection process.

Data extraction

Data from each article will be extracted by two reviewers (AM, YC) in Covidence. The two reviewers will first extract data from 10 articles together to finalise the data extraction tool and achieve consistency in the extraction process (table 1). Inconsistencies will be discussed with a third reviewer (EL) until a consensus is reached. The following information will be extracted: author and year; study purpose; design; setting; sample size (total, intervention, control); participant characteristics (eg, mean age or age range, race/ethnicity, menopause status); intervention format, content and duration; control group (if relevant); study outcomes of interest and their operationalisation; key findings and limitations.

Quality assessment (risk of bias)

To assess study quality/risk of bias, we will apply the Cochrane Risk of Bias tool (updated version RoB 2) in randomised experimental studies and the Risk of Bias in Non-Randomized Studies of Interventions (ROBINS-I) tool in quasi-experimental studies.^{19 20} The RoB 2 assesses potential bias due to participant selection, randomisation, deviations from intended interventions, selection of outcome reported, completeness of outcome data and reported results.²⁰ The ROBINS-I additionally assesses the risk of bias from confounding. Each of these categories for risk of bias is judged as 'low risk', 'moderate risk', 'serious risk' and 'critical risk' of bias.¹⁹ Overall quality/risk of bias will be assessed using ratings from across domains, with a study being judged to be as overall 'low risk' if it had a low risk of bias for all domains. 'Low risk' indicates a high-quality study with a low risk of bias. The study will be judged as 'moderate risk' if it is a non-randomised study with a low risk of bias or a randomised study with a moderate risk of bias in at least one domain. A study will be judged as having a serious risk of bias if at least one domain is rated as 'serious risk', but there is no critical risk of bias in any domain. The study will be judged as a 'critical risk' if at least one domain has a critical risk of bias. Two reviewers (AM, YC) will independently perform quality appraisal. Any disagreements will be discussed by the study team until a consensus is reached.

Data synthesis

Since we are including studies with multiple designs and outcomes, a meta-analysis is not possible. Thus, we will use a narrative or descriptive synthesis of the data. We will synthesise the evidence separately by study design (experimental vs quasi-experimental) and for each outcome of interest. We will synthesise findings based on the intervention format and participant characteristics, looking for patterns to report. For each study, we will report the change in menopause knowledge, self-efficacy, symptoms and quality of life. For studies with a comparison group, we

will also report whether these changes differ between the intervention and control groups. While effect estimates for each study will be reported in a table, we will synthesise these findings by reporting a range and distribution of observed effects. We will categorise whether the intervention had a positive effect, no effect or negative effects on the outcomes of interest and include a vote count based on the directionality of the effect. Our synthesis will also compare whether there are certain intervention characteristics (eg, online, in-person, duration) that have a greater impact on the outcomes of interest.

Patient and public involvement

None.

ETHICS AND DISSEMINATION

Ethical approval is not required for this systematic review of published literature. Findings from this systematic review will be disseminated via peer-reviewed journal publications, presentations at professional scientific meetings and social media.

DISCUSSION

There is a need to adequately prepare women for menopause.²¹ This systematic review will critically evaluate the potential of menopause education interventions to improve menopause knowledge and self-efficacy, as well as menopause-related symptoms and quality of life. This will be the first review to comprehensively evaluate experimental and quasi-experimental studies of a menopause education intervention in midlife women. A prior systematic review and meta-analysis were conducted, but only experimental studies focused on quality of life were included.²² Findings from our review may reveal the most effective format, content and duration of an intervention to enhance menopause knowledge and self-efficacy, which may result in the adaptation of self-management to improve menopause-related symptoms and quality of life. Thus, findings from this review may reveal how menopause education interventions can positively influence women's experiences during the menopause transition.

Additionally, study findings may highlight the importance of providing comprehensive, evidence-based menopause education to enhance patient-provider communication and the decision-making process. An American Association of Retired Persons survey revealed that just 35% of women aged 40–49 years reported ever discussing menopause with their healthcare provider.²³ Similarly, the EMPOWER survey showed that only 10–15% of healthcare providers initiate conversations about menopause symptoms, specifically vulvovaginal atrophy.²⁴ Menopause education may enhance knowledge and empower women to introduce the topic of menopause during patient-provider interactions. However, since this review is not focused on the education of providers, additional research is needed to evaluate the impact of

Table 1 Data extraction form

| General information | | | | | | |
|---|---------------------------------------|---------------|----------------------------|-----------------|-------|---------------------------|
| Title of the paper/article/report | | | | | | |
| Publication type | | | | | | |
| Country in which the study was conducted | | | | | | |
| Name/ID of the person extracting data | | | | | | |
| Notes | | | | | | |
| Study characteristics | Description as stated in report/paper | | | | | Location in text (page #) |
| Aim of study | | | | | | |
| Study design | | | | | | |
| Population description (from which study participants are drawn) | | | | | | |
| Setting (including location and social context) | | | | | | |
| Inclusion criteria | | | | | | |
| Exclusion criteria | | | | | | |
| Method/s of recruitment of participants | | | | | | |
| Participants (provide overall data and, if available, comparative data for each intervention or comparison group) | Description as stated in report/paper | | | | | Location in text (page #) |
| | Comparison or pre-test | | Intervention or post-test | | | |
| # of participants/sample size at baseline and follow-up | | | | | | |
| Age (mean, median or range) | | | | | | |
| Race/ethnicity | | | | | | |
| Baseline imbalances | | | | | | |
| Treatments received (type of intervention or control, format, content, duration, delivered by?) | | | | | | |
| Other relevant socio-demographics | | | | | | |
| Notes | | | | | | |
| Outcomes | Description as stated in report/paper | | | | | Location in text (page #) |
| Outcome name (if other) | Menopause knowledge | Self-efficacy | Menopause related symptoms | Quality of life | Other | |
| Outcome definition | | | | | | |
| Time points measured (specify whether from start or end of intervention) | | | | | | |
| Time points reported | | | | | | |
| Measurement tool and validity | | | | | | |

Continued

Table 1 Continued

| General information | | | | |
|--|---------------------------------------|---------------------------|----------------------------|---------------------------|
| Follow-up method if different from baseline (if any) | | | | |
| Notes | | | | |
| Results and findings | Description as stated in report/paper | | | Location in text (page #) |
| Results (report baseline and post-intervention data where applicable, note changes from baseline and report if adjusted or unadjusted) | Comparison or pre-test | Intervention or post-test | | |
| Direction of effect (intervention had positive effect, negative effect, no effect, not applicable) | Menopause knowledge | Self-efficacy | Menopause related symptoms | Quality of life |
| No. missing and reasons | | | | |
| Any other results reported | | | | |

menopause education on the clinical decision-making of healthcare providers.

There are several potential limitations of the review. First, there may be a small number of eligible studies focused on each outcome of interest. Next, this study is limited to English and Spanish language peer-reviewed publications or dissertations, which may exclude pertinent literature in other languages. In addition, we will include experimental and quasi-experimental studies as well as multiple primary and secondary outcomes, which will introduce heterogeneity and not allow for a meta-analysis of the findings. However, a key strength of this review is that we will comprehensively search the literature, including six electronic databases and relevant dissertations. Moreover, this study will synthesise findings on the impact of menopause education on menopause knowledge and self-efficacy, which have not been reported in prior reviews and may be associated with symptom management, symptoms burden and quality of life. Finally, we will use rigorous study quality/risk-of-bias assessment tools.²⁵

Contributors AM and YC were responsible for the conceptualisation and the original draft. JDB assisted with the search strategy and reviewed and edited the protocol. EL reviewed and edited the protocol. YC is responsible for the overall content as a guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

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