A qualitative assessment of health behaviors and experiences during menopause: A cross-sectional, observational study

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A R T I C L E   I N F O

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A B S T R A C T

Objectives: A qualitative research study was performed to assess the health and lifestyle behaviors of middle-aged women during the menopause transition, as well as to inform the development of interventions designed to combat menopause symptoms and improve quality of life during and after menopause.
Study design: Data were collected from 1611 women via a 21-item questionnaire distributed electronically. Only women who self-reported age ≥ 40 years and who were either peri-menopausal or post-menopausal were included in the analyses.
Outcome measures: Women responded to questions about their health behaviors and experiences during menopause, including use of hormone replacement therapy (HRT), symptom ratings, and use of diet/lifestyle, exercise, and holistic remedies to relieve menopause symptoms.
Results: More than 80% of women were interested in a structured lifestyle program to alleviate menopause symptoms, with 72% of these women wanting targeted strategies for weight loss or weight maintenance. Insomnia and hot flashes were the most severe symptoms reported. Although HRT is a well-established treatment of menopausal symptoms, more than 60% of women denied use of HRT, stating that they 'never considered HRT' as a treatment option or 'preferred to not take HRT'. Most women (65%) did not feel prepared for menopause.
Conclusions: Women do not feel prepared for menopause and report interest in a structured lifestyle program containing weight-loss and weight-maintenance strategies to combat menopause symptoms.

1. Introduction

Menopause is a natural biological process of reproduction when a woman's menstrual cycle permanently ceases and estrogen levels decline as the result of progressive ovarian failure. Natural menopause occurs at an average age of 51 years, varying widely from 40 to 58 years [1]. During the transition through menopause (i.e., peri-menopause) and in the years after menopause (i.e., post-menopause), there is a diverse range of metabolic impairments as well as physical and emotional symptoms that can negatively impact a woman's overall quality of life. Common metabolic impairments include weight gain, increased visceral and subcutaneous abdominal adiposity, impaired glucose tolerance, hyperinsulinemia, and hypertension [2–5]. Additionally, physical and emotional symptoms often include vasomotor symptoms (VMS, or "hot flashes"), sleep disturbances, fatigue, and sexual complaints [1]. With the increase in life expectancy, women who reach menopause are expected to live another 30 years in a potential state of disrupted cardiometabolic health and decreased quality of life due to some of these derangements.

While recommendations for clinical care of midlife women exist [1], women are often left to navigate the menopause transition on their own. Hormone replacement therapy (HRT) is the most effective treatment for VMS [6]; however, concerns surrounding its potential health risk still remain [7–9]. Conversely, non-pharmacologic, physician-recommended care often includes adopting a healthy lifestyle (e.g., healthier eating, increased physical activity) primarily to mitigate metabolic impairments and secondarily to curb menopausal symptoms [1,10]. Despite these recommendations, there is a gap in knowledge surrounding the actual health behaviors and experiences of women during the menopause transition. While some studies exist, data are often limited or specific to one form of therapy (e.g., HRT, alternative therapy) [11,12].

The objective of this qualitative research study was, therefore, two-fold: (1) to assess health and lifestyle behaviors of women who were currently transitioning, or had previously transitioned, through menopause; and (2) to understand what tools or programs women use to

combat menopause symptoms and improve quality of life. The use of such participatory research strategies will better inform the planning and conduct of future interventions with the knowledge of those women impacted by the menopause transition.

2. Methods

2.1. Study design and setting

This was a cross-sectional, qualitative research study. Women who were currently transitioning, or had previously transitioned, through menopause were targeted to complete an open, voluntary 21-item questionnaire specifically developed for this study. Women could be either symptomatic or asymptomatic for menopause-related symptoms.

The questionnaire and data capture was managed using the Research Electronic Data Capture (REDCap) tool hosted at the Pennington Biomedical Research Center (PBRC) [13]. The questionnaire was tested for functionality and usability before launch and was accessible for three months (September–December 2017). After providing electronic consent to participate, participants proceeded to the remaining questions (17–21 total; range due to conditional logic). Estimated time needed to complete the questionnaire was 10–15 min. There was no provision to review or change responses after submission. Completeness checks were not used, and no measures were used for prevention of multiple entries from the same individual.

The study was approved by the PBRC Institutional Review Board and participants acknowledged consent by initiating the questionnaire and submitting responses. All procedures were in accordance with the 1964 Declaration of Helsinki.

2.2. Recruitment

Individuals were offered the opportunity to participate in this qualitative research study through targeted advertisements on Facebook, or via an email to a managed listserv operated by PBRC staff who were part of the study recruitment team. Individuals were directed via an electronic link to the secure REDCap web application. Only those individuals who identified as female were allowed to participate in the research study. No incentives were offered for participation.

2.3. Participants

The study was open to 2500 women of all races and ethnicities. Women were included in response to two compulsory questions: (1) age category; and (2) presence/absence of menopausal symptoms and details surrounding menstrual cycle variability. Women were also asked to self-report weight, height, age at menarche, and history of full/partial hysterectomy and bilateral oophorectomy. Women were then classified into 5 menopause categories based on the STRAW + 10 criteria [14]: (1) pre-menopause; (2) peri-menopause [early phase]; (3) peri-menopause [late phase]; (4) post-menopause [symptomatic]; and (5) post-menopause [asymptomatic]. Specifically, women were asked to self-classify themselves into 1 of these 5 menopause categories based on the provided description:

MENOPAUSE STAGE	DESCRIPTION
Pre-Menopause	*"I do not have menopausal symptoms yet, and I continue to have regular or variable periods."*
Peri-Menopause – Early Phase	*"I am currently experiencing menopausal symptoms. I have regular monthly periods, but the length or flow of each period varies."*
Peri-Menopause – Late Phase	*"I am experiencing menopausal symptoms and have not gone 12 months in a row without a period, but I sometimes have more than 60 days between periods."*
Post-Menopause – Symptomatic	*"I haven't had my period in over 12 months, but I continue to have menopausal symptoms."*
Post-Menopause – Asymptomatic	*"I haven't had my period in over 12 months, and I no longer have (or never had) menopausal symptoms."*

Women who self-classified as pre-menopause were excluded at the first question and did not complete the questionnaire. Women who self-classified as post-menopause [asymptomatic] were asked to recall their symptoms and experiences during the menopause transition.

2.4. Variables

The survey instrument is provided as supplemental material. Symptom severity was assessed using a modified Kupperman Index rating scale *[Q9]*. Women were asked to rate their experience over the last 1 month with each menopausal symptom with respect to symptom presence. Symptom ratings were scored (unweighted) and were used to both rank those individual symptoms that were the most severe, as well as to generate an overall index (raw total) of symptom presence. Symptom interference with normal daily activities was also polled *[Q10]*. Use of HRT, or reasons for not using HRT (if applicable), were asked *[Q11 & Q11a]*. Women were asked about use of the following tactics to combat their menopause symptoms: (1) diet/lifestyle modifications *[Q13]*, including exercise mode/frequency *[Q14 & Q14a]*; (2) holistic remedies *[Q15 & Q15a]*; or (3) any other remedies *[Q12 & Q12a]*. General interest surrounding participation in a structured lifestyle program to help minimize their menopausal symptoms *[Q16 & Q19]*, as well as what components of a lifestyle program would be most important to them *[Q17]* were also queried. As a follow-up, women were asked two free response questions to: 1) highlight elements of a lifestyle program that are important but that were not mentioned *[Q18]*; and 2) make suggestions to other women going through the menopause transition on how to improve overall quality of life *[Q21]*. Finally, women were asked about their perceived preparedness for the menopause transition *[Q20]*.

2.5. Statistical analysis

All analyses were performed using SAS v9.4 software (SAS Institute, Inc.) with a significance level of $\alpha = 0.05$. Overall participant characteristics are expressed as mean ± standard deviation (SD). Chi-square analyses were used to compare differences in frequency distribution between menopause groups. Ranking of symptoms, exercise preferences, holistic remedies, and important components of a lifestyle program were treated as continuous measures and modeled using the least-squares means (LSM). *T*-tests constructed from LSM were used to compare differences between menopause groups for all continuous variable assessments. For the two open-ended questions, thematic analysis was used to develop coding schemes using NVivo 11 Plus (QSR International, Melbourne, Australia). In all analyses, we did not adjust for age due to the presence of a high association (goodness of fit; $X^2 = 696$, p < 0.0001) between age categories and menopause stage.

3. Results

3.1. Participants

A total of 1874 women consented to participate in this qualitative study and initiated the questionnaire. Of these, 91 women self-reported as pre-menopausal, 159 women either did not report menopause stage