Can walking exercise programs improve health for women in menopause transition and postmenopausal? Findings from a scoping review

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Abstract

Objective: Our goal was to explore the range and characteristics of published papers on therapeutic walking programs for menopausal women and to identify program features that resulted in successful outcomes including reduced symptoms and improved long-term wellness.

Methods: We searched biomedical and exercise-related databases for articles published up to June 1, 2017, using keywords related to menopause and walking. Data were collected into EndNote X8 reference manager to identify and remove duplicates. The final selection included all articles that studied walking as a health intervention for women in menopause transition or postmenopausal.

Results: A total of 3,244 papers were collected from the six databases. After removing duplicates and applying inclusion and exclusion criteria, 96 articles were charted, including 77 different walking programs. Walking interventions ranged from 4 weeks to 3 years with an average weekly frequency of 3.8 \pm 1.8 and were applied to a variety of symptoms and their biological markers and risk factors. Overall, 91% of the programs showed a beneficial outcome in at least one menopause-related medical issue. Information on menopause-specific symptoms, especially vasomotor symptoms and sleep problems, was scarce.

Conclusion: The scoping review highlights the growing interest in walking programs as therapies for menopause and related symptoms and provides evidence of their possible benefit as a wellness option for women in menopause and beyond. Further research would be recommended to establish the therapeutic value of walking programs for women with specific focus on typical menopause symptoms at different stages of menopause.

Key Words: Menopause – Menopause symptoms – Walking exercise – Walking intervention.

Video Summary: http://links.lww.com/MENO/A587.

Hormonal changes during the menopause transition period are often associated with physical and psychological symptoms that can negatively impact a woman’s wellbeing and quality of life (QOL).1-3 These symptoms encompass a variety of bothersome health issues including vasomotor symptoms, muscle and joint pain, headaches, sleep problems, lack of energy, mood swings, depression, and anxiety.2,4 In addition, the menopause transition is temporally associated with an increased risk for health issues such as osteoporosis, type-2 diabetes, and cardiovascular diseases. The mainstay treatment for menopause is menopausal hormone therapy (MHT), but many women are...
reluctant to take hormones due to fear of risking potential illnesses such as cardiovascular events or breast cancer.6,9 Women, therefore, may turn to alternative interventions to maintain well-being and physical health.

The health benefit of physical activity is well established7,8 including long-term effects for postmenopausal women.9 Health Canada suggests at least 30 minutes per day of moderate to vigorous activity as measured by the Canadian Community Health Survey and Physical Activity Benchmarks/Monitoring Program, consistent with the WHO Global Strategy on Diet, Physical Activity and Health.10 The 2018 US Department of Health and Human Services Physical Activity Guidelines for Americans recommend 150 minutes of moderate or 75 minutes of vigorous or a combination per week for substantial health benefits; nevertheless, they noted that any kind of physical activity is better than none.11 The latter statement is confirmed by findings from a cross-sectional study demonstrating beneficial effects of light-intensity physical activity.12

Despite the guideline recommendations, women are often reluctant to exercise, citing barriers such as poor health, lack of time due to family responsibilities, lack of company or encouragement, lack of facility access or adequate opportunities, costs, threat of embarrassment, and fear of safety.13-16 Walking is a widely accessible, low cost, low injury risk approach to exercise with proven health benefits for both body and mind, and can be complimentary to almost all contemporary treatments.17,18 Still, its therapeutic effect on alleviating menopause symptoms is not well characterized.19,20 Understanding the therapeutic scope and effectiveness of walking programs may help to support women in the menopausal transition with symptom alleviation and setting healthy goals in midlife and beyond.

This scoping review explored the range and variety of available studies using walking as a therapeutic program for menopause-related symptoms and risk factors, such as those for mental and cardiovascular health, arising during the menopause transition period.

Our ultimate goal is to produce evidence for a walking program that encourages sustained engagement in physical activity and can serve as a wellness-promoting option for women during the menopausal transition and continuing after menopause.

**METHODS**

The scoping review follows the Joanna Briggs Institute reviewers’ manual 201521,22 (updated in 2017)23 for scoping reviews using the framework outlined by Arksey and O’Malley and enhanced by Levac, Colquhoun, and O’Brien.24,25 The search strategy was conducted in three steps and the final search is outlined in the PRISMA-ScR Flow Diagram (Fig. 1).26

**Database search**

A preliminary search was initiated using the discovery service EBSCO through the University of Alberta libraries with keywords “menopause” and “walking” to explore the pool of available literature on the topic. This resulted in 842 records including 493 academic papers, 170 magazines, 62 news article, 22 books, 3 theses, and 2 reviews. A search with the same keywords in Google Scholar resulted in more than 33,500 hits compelling us to redefine the keyword “walking.” In the second step, six databases were searched for articles from inception to June 1, 2017 using menopause-related keywords paired with “walking” terms such as walking-exercise, -therapeutic, -program. Databases included Medline, EMBASE, CINAHL, Sport Discus, Scopus, and Web of Science. Menopause-related keywords used were perimenopause, postmenopause, menopause, climacteric, menopause and climacteric symptoms, and menopause transition. As a third search strategy, the reference lists of review papers were scanned for additional studies; review articles themselves were not included.

**Eligibility criteria**

**Types of participants**

Studies were eligible if they included a defined group of women in perimenopause (various stages of menopause transition) or postmenopausal as described by the study authors, with no restriction on years past their last menstrual period. Premenopausal or younger women could be included as comparators as their own distinguishable group. Studies including men were excluded. We did not put a restriction on participant selection for specific health or lifestyle conditions such as cancer, body weight, sedentary lifestyle, smoking, and so on or medication use such as MHT. These restrictions were, however, considered in the analysis.

**Concept**

Any type of study design was included if it used walking as a health intervention for women in menopause and postmenopause age. Study designs could include randomized and nonrandomized controlled trials, and cohort or case-control studies. Studies that mentioned walking exercises retrospectively in surveys or epidemiological studies without describing details of the walking program were excluded. Papers in any language were eligible.

**Context**

Study interventions should describe a walking program of greater than 3 weeks duration. Walking should be evaluated as a single intervention and not combined with other interventions such as drugs, diet, or additional exercises, for example, as aerobic dancing, jogging/running, stairs, or circuit training. Other or concomitant interventions could be used for comparison or might be the main study objective. In cases where the walking exercise was used as a control or comparison to another intervention, papers were included if adequate data for this control intervention were provided with regard to control woman group and specifics of control walking intervention. Papers were included if the walking intervention was started and/or finished with 5 to 10 minutes of stretching or warm ups.
Selection of papers

Articles from the database search were collected into EndNote X8 reference manager to identify and remove duplicates. Articles were subsequently independently assessed by title and abstract by two investigators (C.T., B.C.S.) to remove ineligible papers. Meeting abstracts, conference proceedings, and commentaries were excluded from the analysis due to limited information on walking strategies, but were cross-checked with peer-reviewed papers from the same group (in case of abstracts) or the investigating group (in case of commentaries). Authors were not contacted to provide further information on the study. The remaining papers were read in full by three investigators (C.T., A.M., B.C.S.) and selected according to the eligibility criteria.

Data extraction

Data were extracted from papers meeting the inclusion criteria above and charted according to publication year; author; participant characteristics and selection criteria; symptoms and health issues investigated; walking intervention specifics such as frequency, duration, intensity, and type; and intervention results and outcomes (for data extraction details see tables, Supplemental Digital Content 1, http://links.lww.com/MENO/A588 and 2, http://links.lww.com/MENO/A589). Data were extracted by two independent investigators (B.C.S., C.T.); discrepancies were assessed by a third investigator (A.M.). Data extraction for relevant publications in foreign languages was performed in collaboration with research colleagues native to the foreign language.

Data analysis

Descriptive analysis was applied to describe the walking intervention and health issues investigated. Data entry and data analysis were carried out using an Excel database.

Quantitative analysis included sample size, participant’s age, and characteristics. If not provided in the text, walking program retention rate was calculated from the number of dropouts per total number of women enrolled in the walking intervention. In cases where two or more papers were published on the same intervention with identical participant group(s) but investigated different medical concerns, walking intervention details were consolidated and considered for walking characteristic analysis only once. For all other purposes such as with regard to study design and medical reason investigated, each paper was analyzed descriptively for individual characteristics.
RESULTS

Selection of included papers

The main goal of our selection strategy was to identify articles that described a walking intervention for women in menopause transition or postmenopausal as a therapeutic measure for menopause-related symptoms.

Our search results from the 6 databases yielded a total of 3,244 articles (Fig. 1: Prisma-ScR Flow Diagram) with 1,486 remaining after removal of duplicates. Eighteen additional papers were handpicked from the reference list of relevant review articles. In cases in which the participant group and/or walking intervention could not specifically be identified from the selected articles’ titles and abstracts, the full paper was read and assessed for eligibility. The final selection included 96 papers for data extraction and analysis (complete compilation of the included papers is provided in the table, Supplemental Digital Content 1, http://links.lww.com/MENO/A588) describing 77 individual walking programs (described in the table, Supplemental Digital Content 2, http://links.lww.com/MENO/A589).27-122

Study characteristics

The earliest eligible papers we identified were published in 1984. Since that time, there has been an increase in the number of papers about menopause care and walking as a therapeutic alternative to symptom treatment (Fig. 2). Although papers were from research groups from a variety of countries all over the world, the majority of papers (n = 85) were written in English; six were written in Persian16,100-102,112,122; two in Chinese72,82; and one each in Japanese,34 Korean,63 and Portuguese.81

Studies described in the 96 papers used a variety of designs to investigate the outcome of walking on women’s symptom changes, wellbeing, and QOL (Table 1). The most common study design was the randomized controlled trial (n = 44) including “no exercise” controls, waitlist controls not subjected to the walking program, or “placebo” (defined by the authors of the papers, eg, upper limb exercise placebo). In four studies that used the walking program as a control, walking was administered in addition to a placebo of the drug under investigation. Of the 52 intervention studies, 14 included a “no exercise” control; the remaining 38 studies used a before-after research design to evaluate the walking program. Studies compared walking to a variety of other exercise- or nutrition-related health interventions such as resistance or circuit training (n = 7), yoga (n = 4), swimming (n = 2), dancing (n = 2), baduanjin/taijiquan (n = 2), pilates (n = 1), and use of vibrators (n = 3) or dietary supplements (n = 5). Eleven studies compared walking in pre- versus postmenopausal women and four studies distinguished women on MHT with those not taking MHT (details of study characteristics are described in Table Supplemental Digital Content 1, http://links.lww.com/MENO/A588).

Participant characteristics

Women participating in the studies were recruited based on their menopause stage and were described in the papers as menopausal, postmenopausal, perimenopausal, or in the menopause transition. A total number of 7,456 participants were recruited in the 96 studies (range from 10 to 270 per study) of which 3,686 (ranging from 6 to 181 per study) were enrolled in and completed a walking intervention. Walking program
retention was on average 86.5% ± 13.3% (range 53.3%-100%). The majority of women appear to be postmenopausal, judged from the average age of all study participants which was 56.8, ranging from 40 to 86 years (Table 1). Half of the studies selected participants with low physical activity and sedentary lifestyle before the walking intervention; 17 studies limited participants to those that were classified as overweight or obese. Other study-specific selection criteria include hypertension (n = 6), diabetes (n = 3), osteoporosis (n = 3), coronary artery disease (n = 2), and one study each for participants required to have depression, an upper arm fracture in past 2 years, breast cancer, sleep disorder determined by Pittsburgh Sleep Quality Index, or severe menopause symptoms determined by either a Kupperman Index of >15 or by more than 2 hot flashes/day. An array of participant exclusion criteria was identified; many of those relevant and specific to the health issue or symptom investigated in the study. MHT was among the most common exclusion criteria with 39 studies (41%) recruiting only women who were not on MHT (details in Table Supplemental Digital Content 1, http://links.lww.com/MENO/A588).}

### Investigated health issues and symptoms
Most of the 96 papers investigated the effect of walking on more than one health issue or symptom (Table 1). The majority of studies included changes in body weight and/or composition in their studies (n = 50, 52%). Risk factors for cardiovascular health were investigated in 44 (46%) studies, metabolic, inflammatory, and immune-endocrine serum markers in 38 (40%) studies, and bone health including fracture risk and markers of bone formation and turnover in 24 (25%) studies. Eight studies included psychological symptoms and mental health and five studies included sleep in their investigation. General menopause symptoms were assessed in four studies

### Characteristics of Walking Programs

**Participant age mean ± SD (n = 96)**

- Sedentary, low physical activity: 41 (43)
- Overweight, obese: 17 (18)
- Other: 20 (21)

**Participant exclusion criteria**

- Menopausal hormone therapies: 39 (41)
- Musculoskeletal disease, orthopedic limitations, fracture risk: 39 (41)
- Cardiovascular diseases (CVD), hypertension: 38 (40)
- On medications that could affect outcome measures: 30 (31)
- Smoking: 27 (28)
- Diabetes: 12 (13)
- Chronic renal, hepatic diseases: 11 (11)
- Chronic lung diseases: 7 (7)
- Mental problems: 7 (7)
- Chronic metabolic diseases: 4 (4)
- Surgical menopause/oophorectomy: 3 (3)
- Cancer: 2 (2)
- Chronic diseases (general): 7 (7)

**Health issue/symptom investigated (outcome measures)**

- Change in body weight/composition: 50 (52)
- CVD risk (heart rate, blood pressure, respiratory/cardiovascular fitness): 44 (46)
- Serum marker imbalance (metabolic, immune-endocrine, inflammatory): 38 (40)
- Bone health, fracture risk (BMI, markers of bone formation and turnover): 24 (25)
- Change in physical aptitude, fitness: 17 (18)
- Mental health, psychological symptoms: 8 (8)
- Diabetic risk (insulin resistance, diabetic risk factors): 6 (6)

**Program duration and frequencies**

- Length of intervention, wk (n = 77): mean ± SD: 23.23 ± 26.99
- Range (min to max): (4-144)
- Frequency of sessions, days/wk (n = 74): mean ± SD: 3.75 ± 1.10
- Range (min to max): (2-7)
- Length of session, min (n = 67): mean ± SD: 45.30 ± 14.15
- Range (min to max): (22.5-90)
- Distance in one session, km (n = 15): mean ± SD: 3.62 ± 1.10
- Range (min to max): (2-4.8)
- Exercise length, km/wk (n = 67): mean ± SD: 161.94 ± 67.85
- Range (min to max): (90-325)
- Exercise distance, km/wk (n = 15): mean ± SD: 14.20 ± 5.86
- Range (min to max): (6-25.2)

**Program type (number of papers [%])**

- Natural walking: 10 (13)
- Exercise on treadmill: 6 (8)
- Natural walking included nine Nordic walking and one walking with ankle weights.

### Characteristics of Selected Papers and Walking Programs (Continued)

**TABLE 1. Characteristics of selected papers and walking programs**

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using various symptom scales including the Kupperman Index (n = 2), the Green Climactic scale (n = 1), and a nonvalidated menopause-specific symptom impact inventory (n = 1). QOL also was assessed in four studies using the short SF36 QOL tool (n = 2), Utian QOL scale (n = 1), and the menopause-specific QOL (MENQOL) tool (n = 1) (Table 1 and Table Supplemental Digital Content 1, http://links.lww.com/MENO/A588). Evaluation of QOL, general menopause, sleep, and mental health were often combined in studies. Only six papers studied menopause-specific concerns such as vasomotor symptoms.

Characteristics of walking programs

The 96 selected papers described 77 different walking programs; 19 papers were duplicates or multiples of the same program including part or all of the same woman group but differed in outcome measures. Health issues were assessed pre- and postwalking program intervention or were compared to control no-walking cohorts. Walking programs varied considerably with regard to length of intervention, frequency, and intensity (Table 1 and Table Supplemental Digital Content 2, http://links.lww.com/MENO/A589). Sixty-two papers reported on the time walked for individual sessions, 10 papers reported on the distance walked during an individual session, and 5 papers described both time and distance. The majority of programs (n = 49, 64%) had a length between 12 to 24 weeks with a frequency of walking three to five times per week. Three programs were observed over 1 to 3 years. Several programs (n = 22) described an increase in session length or distance (n = 17 increase in session time, n = 5 increase in distance) in the initial stage of the intervention, before plateauing with a set intervention regime. Similarly, in some studies (n = 10) the intensity was increased over the first several weeks from low to moderate intensity, sometimes reported as an increase in percentage heart rate reserve or increase in maximal oxygen uptake (VO₂max), for example from 40% or 50% to 60% or 70%. Although measures of walking intensity varied and were mostly given as a range it appeared that the majority of programs aimed for a moderate to vigorous exercise intensity at around 60% to 70% maximum heart rate or heart rate reserve (for details see Table Supplemental Digital Content 2, http://links.lww.com/MENO/A589).

Most intervention programs were fully (n = 31) or partially (n = 14) in-person supervised. Twenty-one programs were not supervised during the intervention; however, seven used occasional or scheduled post-walk checks in-person, by telephone, or online. If not fully supervised, participants were frequently asked to record walking progress and intensity in form of exercise logs and completed time sheets, or it was measured via pedometers (Table 2).

Compliance with program requirements was described in only 26 programs. A compliance rate of more than 90% was reported more often in fully supervised programs including post-walk checks (6/11, 55%) than in partially supervised (3/8, 38%) or unsupervised programs (3/7, 43%).

The majority of programs used natural walking (not using exercise machines) as the intervention (n = 61), including Nordic walking (n = 9) and walking with ankle weights (n = 1); 10 programs were performed on treadmills (Table 1).

Outcomes of walking programs

Of the 96 studies 87 (91%) reported a beneficial outcome from their walking program in at least one of the menopause-related health issues investigated (see Table Supplemental Digital Content 1, http://links.lww.com/MENO/A588). This includes 27 studies that demonstrated benefits for one or more health issues but no improvement for one or more others in the same study. In nine studies (9%) the issue investigated did not improve or showed no difference compared to the nonwalking control group. None of the studies noted an increased risk or worsening of the investigated health issue(s) in the walking groups.

Most improvement from walking programs was recorded for mental health (100%), cardiovascular risk factors (91%), and physical fitness (88%) (Table 3). It was, however, cautioned in several papers that positive outcome was not noted in all women and was dependent on adherence and intensity level. Outcome for menopause-specific symptoms and menopause-specific QOL was generally positive; however, in the majority of these studies the participants were specifically selected for their experience of moderate to severe menopause symptoms and four studies excluded women on MHT. There were contrasting results in two studies regarding outcomes in the sexual domain compared to symptoms in other domains. One study showed improvement in sexual symptoms but not in all other menopause symptoms; another study reported improvement in vasomotor, psychosocial, and physical domain, but not in sexual domain (Table 4), although weekly session length and intensity between the two studies were similar (for program characteristics see Table Supplemental Digital Content 2, http://links.lww.com/MENO/A589).

<table>
<thead>
<tr>
<th>Supervision</th>
<th>Fully supervised walk</th>
<th>Partially supervised walk</th>
<th>Unsupervised Walks by phone, email, or in person</th>
<th>Scheduled postwalk checks</th>
</tr>
</thead>
<tbody>
<tr>
<td>not recorded</td>
<td>n = 31</td>
<td>n = 14</td>
<td>n = 7</td>
<td>n = 11</td>
</tr>
<tr>
<td>No additional monitoring</td>
<td>27 (87.1)</td>
<td>8 (57.1)</td>
<td>1 (7.1)</td>
<td>2 (28.6)</td>
</tr>
<tr>
<td>Pedometer</td>
<td>2 (6.5)</td>
<td>-</td>
<td>2 (14.3)</td>
<td>1 (14.3)</td>
</tr>
<tr>
<td>Exercise log</td>
<td>1 (3.2)</td>
<td>5 (35.7)</td>
<td>10 (71.4)</td>
<td>4 (57.14)</td>
</tr>
<tr>
<td>Pedometer + Exercise log</td>
<td>1 (3.2)</td>
<td>1 (7.1)</td>
<td>1 (7.1)</td>
<td>-</td>
</tr>
</tbody>
</table>

TABLE 2. Type of monitoring recorded for the walking programs (N = 77)
DISCUSSION

We conducted a scoping review of therapeutic walking programs for menopausal women to investigate walking program characteristics and identify features (walking frequencies, durations, intensities, places, etc) that have resulted in successful outcomes such as reduction in menopause symptoms and disease risk factors, QOL improvement, and program adherence.

The benefits of exercise in general are well established; however, there is conflicting evidence of its effect in alleviating menopausal symptoms.19,123,124 In our scoping review we specifically concentrated on walking programs as therapeutic interventions as walking is a low cost exercise, does not require special equipment, is accessible to all able-bodied persons, and can be complementary to other therapeutics. In this regard walking presents fewer barriers for women in midlife who are looking to start and maintain an easily available, hassle-free exercise program.

Key findings

Our search up until June 2017 yielded 77 individual walking programs for menopausal women described in 96 studies. Walking impact was investigated for a variety of menopause-related health issues including cardiovascular risk, weight changes, bone health, mental health, sleep, and vasomotor problems. With an average weekly exercise length

<table>
<thead>
<tr>
<th>Health issue/symptom investigated</th>
<th>Number of studies reporting on health issues</th>
<th>Improved (N [%])</th>
<th>No improvement (N [%])</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in body weight/composition</td>
<td>50</td>
<td>33 (66)</td>
<td>17 (34)</td>
</tr>
<tr>
<td>Cardiovascular disease (CVD) risk and CVD risk factors</td>
<td>44</td>
<td>40 (91)</td>
<td>4 (9)</td>
</tr>
<tr>
<td>Serum marker imbalance</td>
<td>38</td>
<td>30 (79)</td>
<td>8 (21)</td>
</tr>
<tr>
<td>Bone health</td>
<td>24</td>
<td>17 (71)</td>
<td>7 (29)</td>
</tr>
<tr>
<td>Change in physical aptitude, fitness</td>
<td>17</td>
<td>15 (88)</td>
<td>2 (12)</td>
</tr>
<tr>
<td>Mental health, psychological symptoms</td>
<td>8</td>
<td>8 (100)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Diabetic risk and diabetic risk factors</td>
<td>6</td>
<td>3 (50)</td>
<td>3 (50)</td>
</tr>
<tr>
<td>Sleep problems</td>
<td>5</td>
<td>2 (40)</td>
<td>3 (60)</td>
</tr>
<tr>
<td>General menopause symptoms</td>
<td>4</td>
<td>3 (75)</td>
<td>1 (25)</td>
</tr>
<tr>
<td>Reduced quality of life (QOL)</td>
<td>4</td>
<td>4 (100)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Low perceived health and physical self-esteem</td>
<td>3</td>
<td>3 (100)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

aHealth issues, symptoms, and health markers are grouped under general categories. 
bStudies can include more than one issue. 
cIncludes fracture risk and changes in bone mineral density (BMD) and bone markers.
of 162 minutes at moderate to vigorous intensity, most programs are in range with the suggested exercise guidelines (150 minutes of moderate- to vigorous-intensity physical activity per week) of the North American health authorities.10,125 Not surprisingly, our findings demonstrate a remarkably beneficial effect on women’s health for the majority of walking programs.

Gaps in research

Our scoping review identified only six papers that specifically investigated walking as a therapy for typical menopausal symptoms such as vasomotor symptoms. Although none of the papers in our studies reported on adverse outcomes or increased symptoms, there are reports that amplified physical activity can lead to increased symptoms under certain conditions.126 Increase in hot flashes has been reported in a study by Elavsky et al127 for women with lower fitness levels. Several studies found no change in vasomotor symptoms in response to physical activity128-131; indeed, some authors recommend that women should not be advised that physical exercise can reduce hot flashes.131 In this area of uncertainty, further research should be conducted to unambiguously establish the effect of walking exercise programs on vasomotor symptoms.

Where specifically investigated it was found that improved outcome was associated with greater adherence to the walking program.30,54,61,66,121 It also, however, appeared that the same walking program while beneficial for one health issue or risk factor may not be effective in improving another. Further research should help to dissect the association between health issues and their individual response to walking exercise.

Study limitations

Although one of our objectives was to establish program characteristics that are beneficial in reducing menopause-specific symptoms as well as those frequently arising at the age of the menopause transition period, it became obvious that we could not directly pool evidence on the walking programs described in the selected studies due to the wide variation in program characteristics.

Programs vary with regard to venue, intensity, length, and frequency. In addition some studies lack pertinent information on some of their program characteristics.

Although some studies make adequate information available, the majority of studies provide limited details about adherence and compliance to walking programs. Because not all study interventions were supervised or recorded, it is not clear how committed women were to the walking intervention as family and work schedules are known to interfere with women’s ability to comply with exercise commitments.15,51

Another limitation that hampers consolidating walking therapy outcomes is the variety in participant eligibility criteria. Although all participants are women in menopause transition or postmenopausal and the majority of studies involve overweight and sedentary women, participants do not present a homogenous group. The age range could be relatively large and was not restricted to a specific menopause stage in the majority of papers; as well menopause stage was rarely defined for participant eligibility. Individual studies often have additional restrictions for study inclusion and exclusion dependent on the specific parameter under investigation. Few studies require women to experience severe or bothersome menopause symptoms at the time of recruitment, consequently beneficial results may be less obvious and may not be easily transferable to women suffering from severe symptoms.

Another limitation in the selected studies is the lack of knowledge about the participants’ pre-existing fitness levels. Although women may not be involved in organized fitness programs, their daily work and habits may or may not lead to enhanced fitness level, adding to variability in physical aptitude. In addition, it should be considered that participation in a stringent walking program might affect daily physical activity; women might reduce other daily physical chores when taking up rigorous walking, thus essentially limiting their overall activity level.36

Implications for research

The selected papers describe a variety of walking exercises with different features and characteristics. Thus, our scoping review can only summarize tendencies of combined program successes or failures for medical symptoms, risk factors, and illnesses under investigation. The fact that there are few papers investigating the symptoms that have been identified as most bothersome for symptomatic women seeking help in menopause clinics, such as sleep problems, mental issues, and vasomotor problems,132,133 highlights the need for further research investigating the therapeutic potential of walking programs for this group of women. Detailed reporting on program features as well as ensuring adherence and compliance will facilitate combining program results and identify walking characteristics that best suit women with specific symptoms or at risk for certain illnesses.

Implications for practice

As a scoping review, our investigation of papers does not provide ratings on the quality of studies included or on the level of evidence provided. Therefore, our results are not geared at informing practice or providing recommendations for therapies.

One concern is that most of the studies enrolled women from the general public; although all women were in menopause transition or postmenopausal only three papers recruited women that were specifically selected for having moderate or severe menopause symptoms such as high Kupperman scores or greater than two episodes of hot flashes per day.82,90,100 This has important implications for the management of women presenting with severe symptoms, especially hot flashes. Results from one randomized controlled trial on the effectiveness of exercise for women suffering from severe hot flashes indicate that exercise is not effective in relieving severe hot flashes and should not be recommended.131 Indeed,
women with severe menopause symptoms may be too unwell to perform exercise. In such cases other treatment options for severe menopause symptoms such as MHT might be considered as a prelude to joining a walking exercise program.

Menopause is a stage in a woman’s life where she may be more concerned about her health due to increasing physical and psychological symptoms associated with the hormonal changes during menopause. For many women this is the time she would be most likely to consider healthy lifestyle changes including diet and exercise regimes. Walking programs may result in long-term health benefits rather than immediate relief of prototypical symptoms.

CONCLUSIONS

The scoping review highlights the growing interest in walking programs as therapies for menopause-related symptoms and as a wellness option for women in menopause and beyond. Although the majority of studies report a positive impact of their program on the health issue or symptom under investigation, a general consensus is hard to establish due to the challenge of program and participant characteristic comparability. In addition, our scoping review revealed a lack of information on the effect of walking on symptoms identified as most bothersome during the menopause transition such as vasomotor symptoms, sleep, and mood changes. Although a walking program will help women to stay fit in midlife and postmenopause, the benefit with regard to relief of typical menopausal symptoms remains unclear. Further research including providing detailed information on menopause stage and walking program characteristics in published studies would be recommended to establish the therapeutic value of walking programs for women with specific focus on typical menopause symptoms at different stages of menopause.

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WALKING EXERCISE PROGRAMS FOR MENOPAUSAL WOMEN


