WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Efficacy Of Yoga Therapy On Menopausal Symptoms Among Working Women

Niharika [1], Dr.Dinesh Panchal [2]

[1-] Research Scholar LYU ahmedabad,
[2-] Dean, lakulish yoga university ahmedabad

ABSTRACT :

Menopause is an important and inevitable phase in a women's life which is usually full of episodes of variety of events. It is a natural biological process, which is end of a woman's reproductive years and the end of menstrual cycles, usually occur around the age of 45-55 yrs. At this stage hormones (estrogen and progesterone) fluctuates and gradually reduces. These hormonal changes develop various physical and psychological variations. Most of the women suffer a lot with these psycho-physiological events which demands a persistent medical care. Mostly medical managements are HRT in nature which might pose the risk of adverse effects. This situation demands a holistic management preferably drugless to cope up with the challenges of menopausal phase.

The current study was conducted to evaluate the efficacy of integrated approach of yoga therapy on menopausal symptoms in working women. Working women mostly struggles to maintain balance between professional and personal life, which demands a holistic approach to provide a useful way for women to deal with these demands to enhance their mental and physical health. A set of yogic practices including asanas, pranayama, relaxations and meditation was prepared to suit the menopausal age. This set was given to the participants to practice for 90 days (3 days a week, 60min per session). Menopause Rating Scale was used to assess pre and post symptoms of menopause.

In present study, data was found to be normally distributed for all the variables. Hence, paired t-test was conducted on this variable (MRS). Menopause Rating Scale (t-value 0.25 and P-value 0.05) was found to be statistically significant. Higher means were observed in post intervention data (Table No.1). The statistical analysis of the results suggests that yogic intervention has statistically significant effect on menopausal symptoms ($P<0.01$). Being a drugless and non invasive therapeutic tool this can be safely practiced under a trained yoga therapist. Further RCT's with a larger sample size may reassert the results.

INTRODUCTION:

Menopause is a natural biological process, which is end of a woman's reproductive years and the end of menstrual cycles. Women generally go through this crucial time in their lives between the ages of 45 and 55, even though it can happen earlier or later based on individual's heredity, lifestyle, and general health (North American Menopause Society, 2015). When a woman has not had a monthly period for 12 months in a line, she enters menopause, which significantly tell that, the end of her fertility and the start of her post-reproductive years (Woods & Mitchell, 2005). This stage is starts by changes in the endocrine system, particularly a slow decline of ovarian function, which lowers progesterone and estrogen levels (Burger et al., 2002). As these hormonal levels fluctuate and decrease eventually, women may experience a lot of physical, emotional, and psychological symptoms. These symptoms can include hot flashes, night sweats, mood swings, sleep disturbances, vaginal dryness, and changes in libido, which can significantly affect a woman's quality of life (Kaufert et al., 2003; Freeman, 2010). The duration and severity of these symptoms are vary in individuals, some may experiencing only mild discomfort, while others may experiance more challenging or persistent symptoms (Nelson, 2008). Despite being an unavoidable aspect of women's aging, menopause is typically followed by the transitional phase of perimenopause which is yet a topic that is generally under-discussed (Guthrie & Dennerstein, 2008). Despite being a normal stage of life, menopause can have a significant impact on a woman's social experiences, mental health, and physical health (Kuhle et al., 2011).

Long-Term Physiological Effects of Hormonal Deficiencies :

The hormonal changes during menopause, that is reduction in estrogen and progesterone, lead to significant long-term health Issues. Estrogen plays an important role in various bodily functions, declines after menopause, results in creating changes in several systems, including cardiovascular, skeletal, and Urogenital health. Estrogen helps to protect cardiovascular health by regulating cholesterol levels and supporting blood vessel function. As estrogen declines, postmenopausal women face increased risks of heart disease and stroke, with elevated LDL cholesterol and lowered HDL cholesterol contributing to these risks (Manson et al., 2007). Additionally, estrogen deficiency is linked to higher blood pressure and impaired vascular function (Kollar et al., 2018). Estrogen plays a critical role in maintaining bone density. After menopause, the loss of estrogen accelerates bone resorption, leading to a higher risk of osteoporosis and fractures. Women may lose up to 20% of bone mass in the first few years after menopause, making

postmenopausal women particularly vulnerable to fractures (Cummings & Melton, 2002). Estrogen influences brain health, and its reduction during menopause is associated with memory and cognitive decline. Studies suggest that postmenopausal women may be at a higher risk for neurodegenerative conditions (Sherwin, 2006). Estrogen's decline is also linked to changes in metabolism, leading to an increase in abdominal fat and higher risks of metabolic syndrome and type-2 Diabetes. Reduced insulin sensitivity and changes in fat distribution contribute to these health challenges (Vasilenko et al., 2014). The hormonal shifts during menopause can develop mood swings, anxiety, and depression. Estrogen's impact on neurotransmitters such as serotonin and dopamine may show these psychological symptoms (Hrt & Muench, 2009).

Challenges of Working Women in the Menopausal Stage :

For working women, menopause creates a lot of difficulties that affect their mental, emotional, cognitive and physical health. These challenges can impact their job performance, career advancement, and overall work-life balance. Symptoms like hot flashes, night sweats, and fatigue can interupt concentration, energy levels, and overall comfort and performance at work. Hot flashes and sleep disturbances often lead to discomfort, embarrassment, and fatigue, reducing cognitive function and productivity (Hunter & Liao, 2015). These changes can impair focus, decision-making, and workplace relationships. Emotional strain often increases stress, particularly when managing work and personal responsibilities (Kaufert et al., 2008). In many organizations, menopause is still not widely discussed, which makes women uncomfortable talking to their symptoms. Women may not receive the help they need to adequately manage their symptoms as a result of this stigma (Greendale et al., 2011). Some women find that workplace environments, such as warm offices, exacerbate menopausal symptoms. A lack of flexible work hours or accommodations for symptoms like fatigue or urinary incontinence further strains their ability to manage work-life balance (Mishra et al., 2016). Physical and emotional challenges during menopause can affect confidence and performance, potentially limiting career progression. Women may scale back their professional commitments, affecting opportunities for promotions or raises (Collings et al., 2015). Menopause often coincides with other life changes, such as care giving responsibilities. Balancing these demands with the challenges of menopause can lead to burnout and diminished well-being (Cohen et al., 2017).

Yoga Therapy

The integrated approach of yoga therapy combines Yogasanas, Pranayama and breathing exercises, meditation, and mindfulness to address the mind, body, and spirit holistically. This approach emphasizes the interconnectedness of mental, emotional, and physical health, recognizing that healing is most effective when all aspects of a personality is balanced. In yoga therapy, physical postures (asanas) are used to improve flexibility, strength, alignment and deep relaxation at musculoskeletal level, promoting overall physical health. Pranayama helps regulate the nervous system, reduce stress, and improve emotional well-being by improving the breathing pattern. Meditation and mindfulness practices promote mental clarity, emotional resilience, and self-awareness, helping individuals manage anxiety, depression, and stress. This integrated approach allows yoga therapy to be customized to the individual's specific needs, making it effective for treating a wide range of conditions, including chronic pain, mental health disorders, trauma, and even as a complementary treatment for conditions like cancer. By addressing the whole person, yoga therapy offers a comprehensive, non-invasive healing modality that supports both short-term recovery and long-term well-being.

Yoga and Women's Health

Yoga offers numerous physical, emotional, and mental health benefits for women, supporting overall well-being and addressing specific health concerns. Below are key areas in which yoga positively impacts women's health: Yoga enhances flexibility, strength, and balance, helping with common, chronic and acute issues such as back pain, joint problems, and cardiovascular health. It is also effective for weight management, boosting metabolism, and improving respiratory function (Cramer et al., 2013; Saha et al., 2017). Yoga helps reduce stress, anxiety, and depression, which are more prevalent in women due to hormonal fluctuations. The practice promotes relaxation, lowers cortisol levels, and improves mood by releasing endorphins (Harvard Medical School, 2016; Gothe et al., 2016). It also encourages body awareness and self-esteem, benefiting women with body image issues (Van der Kolk, 2014). Yoga aids in managing menstrual irregularities, alleviating menstrual cramps, and improving fertility by reducing stress and balancing hormones (Bajaj et al., 2013; Rakhsha et al., 2017). It also supports women through menopause by easing symptoms like hot flashes and sleep disturbances (Aftab et al., 2017). Yoga strengthens bones and muscles, reducing the risk of osteoporosis in postmenopausal women. It also helps improve balance, reducing the risk of falls and fractures, while promoting cardiovascular health (Cramer et al., 2011; Kirkwood et al., 2016). Yoga provides relief from chronic pain conditions such as arthritis, fibromyalgia, and lower back pain by increasing flexibility and reducing muscle tension (Saper et al., 2017).

Need of Yoga practice for Women to Balance Work and Personal Life in current time:

In the fast-paced society of today, women frequently struggle to strike a balance between their duties to their families, their careers, and their personal wellbeing. Stress, worry, physical strain, and emotional fatigue can be the outcomes of this never-ending juggling act. Yoga's comprehensive approach to health provides a useful way for women to deal with these demands, enhancing their mental and physical health in the process. Stress reduction is one of yoga's main advantages; this is a common problem for women juggling many responsibilities. By encouraging breathings exercises and pranayama, mindfulness, and meditation, yoga lowers stress levels by activating the parasympathetic nervous system (Gothe et al., 2016). Practice on a regular basis improves mental concentration and clarity, enabling women to approach everyday tasks with composure and center (Harvard Medical School, 2016). Yoga therefore offers a priceless coping mechanism for the demands of both personal and professional life. Women can better handle the emotional pressures of juggling work and home life by practicing yoga, which promotes emotional regulation and resilience. Yoga helps women become more self-aware and present through mindfulness-based practices, which makes it simpler for them to identify and control negative emotions

like tension, anxiety, or frustration (Van der Kolk, 2014). Yoga's emphasis on breath awareness and body awareness also aids in women's emotional stability, which is necessary for handling life's obstacles with poise and dignity. Women often experience physical strain from long working hours, sedentary lifestyles, and the physical demands of family life. Yoga enhances physical well-being by improving strength, flexibility, and posture, addressing issues like back pain, joint stiffness, and fatigue, which are commonly experienced by women who lead busy lives (Cramer et al., 2011). Yoga's gentle movements and stretching exercises increase circulation, reduce muscle tension, and help maintain energy levels throughout the day, allowing women to feel more refreshed and capable of handling their responsibilities (Saha et al., 2017). Women are encouraged to prioritize self-care and create appropriate boundaries between work, family, and personal time by yoga's emphasis on mindfulness. Frequent practice prevents burnout by giving one the mental room to consider their priorities. Yoga assists women in developing a more harmonious attitude to managing their personal and professional life by teaching them the value of balance and cultivating self-compassion (Van der Kolk, 2014). This technique lowers the danger of mental and physical exhaustion by empowering women to identify when they need to rest and recover. Yoga encourages a deeper connection to one's body and mind, fostering self-awareness that is crucial for maintaining a balanced life. By increasing self-awareness, yoga helps women understand their own needs, limits, and desires, empowering them to make choices that align with their well-being (Saha et al., 2017). This heightened sense of self-awareness promotes self-acceptance, confidence, and empowerment, which are key to navigating the complexities of modern life and maintaining a healthy balance between work, family, and personal goals. A significant gap in existing research is the lack of studies specifically analyzing the effect of yoga practices on menopausal symptoms among working women. While research has explored the benefits of yoga for general health and menopause management separately, no study has focused on how yoga can help working women manage menopause symptoms such as fatigue, mood swings, and poor concentration. Working women face unique challenges during menopause, and there is a need to examine whether yoga can alleviate these symptoms, improve productivity, and enhance job satisfaction. This gap highlights the importance of investigating yoga as a potential intervention for menopausal women in the workplace.

Methodology:

Hypothesis

Yoga therapy practices will have a significant effect on reducing the menopausal symptoms among working women.

Objectives

To evaluate the effect of Yogic intervention on Menopausal symptoms among working women.

Study design

This study was conducted with single group pre-post design to test the impact of the yogic intervention on participants.

Sampling

Convenience sampling method was used to select the samples. Participants were selected according to their availability. Sample was selected from nearby residences, apartments, health care centers, hospitals, yoga centers, menopause centers.

Sample size:

The sample size (N) for the study was 30.

Selection criteria:

Inclusion Criteria

1. Women aged between 45-60, who are in the stage of perimenopausal or postmenopausal stage.
2. Women who are experiencing psycho physiological symptoms.
3. Women who were willing to attend regular Yoga therapy sessions according to protocol.
4. Women who were voluntarily participated in the study.

Exclusion Criteria

1. Women who were suffering from various chronic and acute medical conditions.
2. Women with severe psychiatric disorders.
3. Undergoing current or recent Hormonal therapy
4. Who were not willing to attend regular Yoga sessions were excluded.
5. Severe and chronic sleep disorders.
6. Women with substance addiction

Variables:

Yogic intervention was used as an independent variable in this study, and the results of different psycho-physiological tests were used as dependent variables.

Independent variables:

Yoga therapy Protocol:

Yoga therapy protocol was designed to address the psycho-physiological symptoms of menopause. The protocol contains Yogasanas, Pranayama, breathing excercises, Meditation, and Relaxations. The program was administered over a period of 90 days, as 3 sessions per week and each session was of 60-minutes.

Dependent variables:

In this study, the dependent variables used to assess the impact of interventions on menopausal symptoms and stress levels include the *Menopause Rating Scale (MRS)*, the *Green Climacteric Scale (GCS)*, and the *Perceived Stress Scale (PSS)*. These dependent variables provide a comprehensive understanding of the physical, psychological and vasomotor changes associated with menopause, allowing the study to measure the effectiveness of the intervention in managing these symptoms.

Tools:

These tools (Questionnaires) together offer a comprehensive approach in measuring the various dimensions of menopausal symptoms, stress, and the overall impact on a woman's well-being.

Questionnaires:

1. MENOPAUSE RATING SCALE

The Menopause Rating Scale (MRS) was developed by a team of researchers led by Dr. Heinemann and colleagues in the early 1990s. The Menopause Rating Scale (MRS**)** is a widely recognized and validated tool used to assess the severity of menopausal symptoms. Developed to provide a comprehensive overview of the physical, psychological, and urogenital symptoms associated with menopause, the MRS helps in evaluating the impact of menopause on a woman's overall well-being.

The scale consists of **21 items**, which are grouped into three distinct domains:

1. Somatic Symptoms (Physical Symptoms):
2. Psychological Symptoms
3. Urogenital Symptoms:

Scoring and Interpretation:

- Each item is rated on a scale from 0 to 4, where 0 = no symptoms, 1 = mild symptoms, 2 = moderate symptoms, 3 = severe symptoms, and 4 = very severe symptoms.
- The total score is obtained by adding up the scores for each item. Higher scores indicate greater severity of menopausal symptoms. The total score provides an overall measure of symptom severity, allowing for comparisons before and after an intervention.

2. THE GREEN CLIMACTERIC SCALE

The **Greene Climacteric Scale** was developed by **Dr. John Greene** in 1998 as a tool to measure symptoms associated with the climacteric (or menopausal) phase in women. It is a self-report questionnaire that evaluates the severity of various symptoms commonly experienced during menopause, covering physical, psychological, and sexual domains. The scale provides insight into the intensity of menopausal symptoms and their impact on a woman's quality of life.

Structure

The Greene Climacteric Scale consists of **21 items** divided into four subscales:

1. **Psychological Symptoms** (anxiety and depression)
2. **Somatic Symptoms** (physical symptoms, such as hot flashes)
3. **Vasomotor Symptoms** (sweating and hot flushes)
4. **Sexual Dysfunction**

Respondents rate each symptom on a 4-point scale, ranging from "Not at all" to "Extremely," based on how frequently they experience each symptom.

The Greene Climacteric Scale was created in response to the need for a standardized instrument to capture the broad range of symptoms experienced during menopause. Since its inception, it has gained acceptance due to its comprehensiveness, covering not only physical but also psychological and sexual health aspects, which are often affected by menopause. The scale is considered a reliable and sensitive tool for understanding the multifaceted nature of menopause and is used globally in both clinical and research contexts. Its wide use has contributed to a better understanding of the climacteric phase and the complex changes that occur during menopause.

3. PERCIEVED STRESS SCALE

The **Perceived Stress Scale (PSS)** was developed by **Sheldon Cohen** and his colleagues in 1983. This scale is one of the most widely used psychological instruments for measuring the perception of stress, and it assesses the degree to which situations in one's life are appraised as stressful. The PSS is based on the concept that stress perception, rather than objective stressors, affects health outcomes and well-being.

Structure

The PSS consists of 10 items (although a shorter 4-item version also exists), which assess how often participants have experienced specific thoughts and feelings related to stress. The questions are related to feelings of helplessness, control, and coping with daily pressures. The scale includes both positive and negative statements, such as:

- "In the last month, how often have you felt nervous and stressed?"
- "In the last month, how often have you felt that you were unable to control the important things in your life?"
- "In the last month, how often have you felt that things were going your way?"

Scoring and Interpretation:

- Each item is scored on a *5-point Likert scale* ranging from *0 (Never)* to *4 (Very Often)*.
- The total score is obtained by summing the scores for each of the 10 items. The higher the score, the higher the perceived level of stress experienced by the individual.
- *Low stress* is generally indicated by a score between 0 and 13.
- *Moderate stress* typically falls between 14 and 26.
- *High stress* is generally indicated by scores between 27 and 40.

Some items are reverse-scored (e.g., "In the last month, how often have you felt confident about your ability to handle your personal problems?"), meaning that a higher score on a reverse item indicates lower stress.

PROCEDURE

To collect the data prior permission has taken from various hospitals and health care centers then consent has taken from the participants. The participation was voluntary and only for the research purpose. After establishing the rapport with participants, all questionnaires were administered with instructions as per manual of the questionnaire. After completion of pre-test each participant has given Yoga sessions for 3 months as per yogic intervention module. After completion of yogic intervention, again same questionnaire was administrated. After completion of the data collection responses of each respondent scoring of each questionnaire was done as per the scoring key of manual of each test.

Statistical analysis

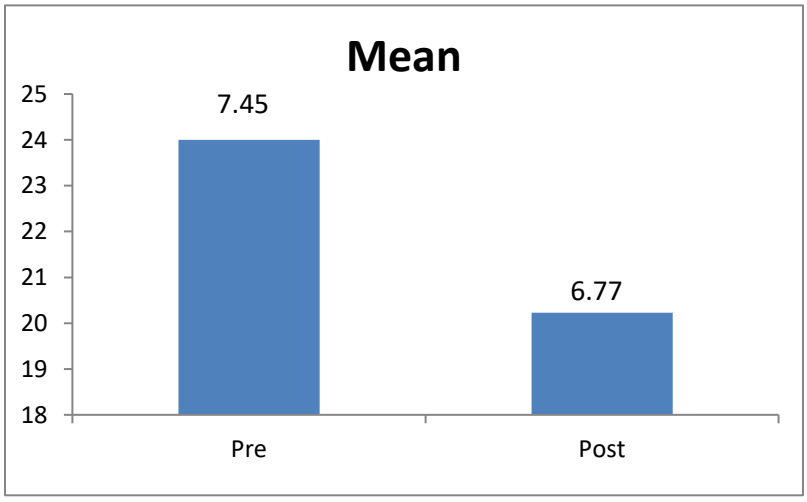
To assess the data, paired t-test was used, which is suitable for this study design.

Results :

Group	N	Mean	SD	SEM	t	Level of significance
Pre	30	24.00	7.45	1.36	2.05	0.05
Post	30	20.23	6.77	1.24		

Data was found to be normally distributed for all the variables. Hence, paired t-test was conducted on this variable (MRS). Menopause Rating Scale (t-value 0.25 and P-value 0.05) was found to be statistically significant. Higher means were observed in post intervention data (Table No.1).

Figure showing means scores of pre and post yogic intervention on Menopause symptoms among Working Women



Discussion :

The aim of the present study was to assess the impact of Yoga practices on menopausal symptoms among menopausal working women. Menopause related symptoms significantly affect a women's quality of life. The results of the present study showcase a moderate reduction in the frequency and severity of various symptoms of menopause. Present results are in line with previous researches, which show that Yoga therapy practices can positively impact various menopausal symptoms. The juggling between professional and personal life may cause working women to experience higher level of psycho-physiological menopause symptoms. The study hypothesized that Yoga as holistic intervention might help reduce symptoms and also helps to manage menopausal symptoms which were confirmed by the results.

Conclusion :

The statistical analysis of the results suggests that yogic intervention has statistically significant effect on menopausal symptoms ($P<0.01$). Being a drugless and non invasive therapeutic tool this can be safely practiced under a trained yoga therapist. Further RCT's with a larger sample size may reassert the results.

REFERENCES :

1. Aftab, M., Ahmed, S., & Kiani, A. (2017). Yoga for menopause: A review of benefits and effects. *Maturitas*, 104, 50-56.
2. Bajaj, S., Sharma, M., & Singh, K. (2013). Effect of yoga on women with menstrual irregularities. *Journal of Alternative and Complementary Medicine*, 19(6), 539-542.
3. Burger, H. G., Hale, G. E., & Dennerstein, L. (2002). A review of the endocrine changes during the menopause transition. *Journal of Clinical Endocrinology & Metabolism*, 87(8), 3621-3625.
4. Cohen, M. S., Harlow, S. D., & Dennerstein, L. (2017). The menopause and quality of life: Impact of symptoms and treatments. *Maturitas*, 96, 45-49.
5. Collings, P. J., Clarke, M. J., & Denny, L. (2015). Menopause and career advancement: A perspective on challenges for women. *International Journal of Women's Health*, 7, 137-143.
6. Cramer, H., Lauche, R., & Dobos, G. (2011). Yoga for improving bone health in postmenopausal women: A systematic review. *Journal of Alternative and Complementary Medicine*, 17(11), 939-946.
7. Cramer, H., Lauche, R., & Langhorst, J. (2013). Yoga for low back pain: A systematic review and meta-analysis. *The Clinical Journal of Pain*, 29(2), 118-127.
8. Cummings, S. R., & Melton, L. J. (2002). Epidemiology and outcomes of osteoporotic fractures. *The Lancet*, 359(9319), 1761-1767.
9. Freeman, E. W. (2010). Menopause. *The Lancet*, 376(9748), 1256-1268.
10. Gothe, N. P., Pontifex, M. B., & McAuley, E. (2016). Yoga and cognitive functioning: A meta-analysis of chronic and acute effects. *Psychology of Sport and Exercise*, 19, 60-68.
11. Greendale, G. A., Sternfeld, B., & Kaplan, R. (2011). Menopause: The transition to a new life phase. *Journal of Women's Health*, 20(9), 1255-1264.
12. Guthrie, J. R., & Dennerstein, L. (2008). Menopause and women's health. *Maturitas*, 61(1), 15-17.
13. Harvard Medical School. (2016). Yoga for stress relief. *Harvard Health Publishing*.
    Kirkwood, G., Foster, C., & O'Brien, M. (2016). The impact of yoga on cardiovascular health: A systematic review. *Journal of Clinical Hypertension*, 18(5), 499-509.
14. Harvard Medical School. (2016). Yoga for stress relief. *Harvard Health Publishing*.
    Saha, S., Ghosh, A., & Sanyal, P. (2017). Effect of yoga on women's health: A review of current research. *Journal of Women's Health*, 26(7), 787-796.
15. Hunter, M. S., & Liao, L. M. (2015). Workplace menopause: Understanding the challenges faced by women. *Menopause International*, 21(4), 187-192.
16. Kaufert, P. A., Guthrie, J. R., & Campbell, D. (2008). Menopause and work performance: The impact of symptoms. *The Journal of Occupational Health Psychology*, 13(1), 63-75.
17. Kaufert, P. A., Liao, M., & Soever, L. (2003). Impact of menopause on women's health. *Journal of Women's Health*, 12(7), 649-658.
18. Kollar, L. E., MacLean, C. D., & Giannopoulos, G. (2018). Menopause and cardiovascular disease risk. *Journal of Clinical Endocrinology & Metabolism*, 103(6), 2143-2151.
19. Kuhle, S., Lix, L., & Walker, M. (2011). Menopause and its impact on women's health. *Canadian Family Physician*, 57(5), 563-570.
20. Manson, J. E., Chlebowski, R. T., Stefanick, M. L., et al. (2007). Menopausal hormone therapy and health outcomes: The Women's Health Initiative. *The Journal of the American Medical Association*, 298(21), 2561-2572.
21. Mishra, G. D., Hockey, R., & Dobson, A. (2016). The menopause and work performance: Exploring the impact of symptoms. *Maturitas*, 83, 1-7.
22. Nelson, H. D. (2008). Menopause. *The New England Journal of Medicine*, 358, 1462-1473.
23. North American Menopause Society. (2015). The menopause guidebook: A comprehensive resource for understanding and managing menopause. *The North American Menopause Society*.

24. Paterson, M., Strachan, L., & Hyman, R. (2015). Employer-led initiatives to support women in the menopause stage. *Workplace Health & Safety*, 63(10), 420-426.
25. Perry, K. W., Johnson, D., & Richter, M. (2016). The impact of menopause on urogenital and sexual health. *Maturitas*, 88, 56-62.
26. Prathik, S., Venugopal, M., & Narasimhan, M. (2015). Role of yoga in improving fertility and reproductive health in women. *Indian Journal of Obstetrics and Gynecology*, 62(5), 382-387.
27. Rakhsha, A., Movahed, M., & Karami, S. (2017). The effects of yoga on the menstrual cycle and reproductive health. *Journal of Yoga & Physical Therapy*, 7(2), 75-81.
28. Saha, S., Ghosh, A., & Sanyal, P. (2017). Effect of yoga on women's health: A review of current research. *Journal of Women's Health*, 26(7), 787-796.
29. Saper, R. B., Sherman, K. J., & Cummings, T. M. (2017). Yoga for chronic pain: A systematic review of the literature. *The Clinical Journal of Pain*, 33(2), 1-10.
30. Sherwin, B. B. (2006). Estrogen and cognitive functioning in women: Lessons we have learned. *Behavioral Neuroscience*, 120(6), 1342-1354.
31. Speroff, L., & Fritz, M. A. (2011). *Clinical gynecologic endocrinology and infertility* (8th ed.). Wolters Kluwer Health.
32. Van der Kolk, B. A. (2014). The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma. *Penguin Books*.
33. Van der Kolk, B. A. (2014). The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma. *Penguin Books*.
34. Vasilenko, P., Haines, K. A., & Segal, S. (2014). Menopause and metabolic health: Effects of estrogen deficiency. *Journal of Women's Health*, 23(10), 866-874.
35. Woods, N. F., & Mitchell, E. S. (2005). Symptoms during the perimenopause: Prevalence, severity, and impact on quality of life. *Journal of Women's Health*, 14(6), 535-542.