Empowering Women through Menopause: Implementing Personalized Nutrition and Lifestyle Changes to Address Menopausal Health Initiatives

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May 27, 2025

Abstract

Menopause and obesity when combined have compounding impacts on a woman's mental and physical health. With the high rate of obesity and the substantial population of women in Oregon at or near menopause, it is important to address the effect that obesity will have on postmenopausal women. At a practice in Oregon, more than half of their 800 post-menopausal women are obese and have at least 1 comorbid condition. Education on healthy nutrition and recommended physical activity was provided at weekly virtual group sessions for 12 weeks that were focused on the unique needs of this population. Post-menopausal participants with a BMI >25, will lose 10% of their body weight and/or improve in at least one wellness initiative by the end of 12 weeks.

The 12-week program resulted in 60% of patients losing weight. Improvement was seen in energy levels, and a decrease was found significant in undesired menopausal symptoms. Attendance was variable and contextual influences were more prominent than initially anticipated. Creating a relevant and evidence-based program, focused on peri and postmenopausal women was successful at improving quality of life. The conclusion drawn from analysis was that improvement in wellness was seen even with partial participation.

Keywords: Obesity, menopause, post menopause, nutrition, exercise, education, weight loss

Understanding Obesity in Post-Menopausal Women

Problem Description

Menopause is defined as an absence of menstrual cycles for 12 consecutive months (Casper, 2023). The average age is 51.4 years at onset of natural menopause, and it is estimated that globally 26% of women have transitioned (World Health Organization (WHO), 2022). Approximately 10% of women are in menopause before 51.4 years (Giri & Vincent, 2020). Menopause and obesity when combined have compounding impacts on a woman's mental and physical health. Obesity is defined as a body mass index (BMI) greater than or equal to 30 and overweight as a BMI greater than 25 (Lin,2021). The WHO reported in 2013 that globally 15% of women were obese. In the United States of America 41% of adult women are obese ("NIH," 2018). In Oregon 41.4% of women are obese (Ward, 2019). In Oregon approximately 721,922 women are near or at the average age of menopause according to the US census from 2021 ("*US census*," 2023). With the high rate of obesity and the Oregon population of women at or near menopause, it is important to address the effect that obesity will have on postmenopausal women.

The risk of many chronic conditions increases after a woman goes through menopause. Obesity has been found to worsen the symptoms and increase the risk of chronic conditions such as heart disease, diabetes, and metabolic syndrome (Mehta et al., 2021). Research has shown that there can be upward of four times an increase in risk of diabetes in post-menopausal women (Cordoloa et al., 2020). At a practice in Oregon, more than half of their 800 post-menopausal women are obese and have at least 1 comorbid condition. The importance of understanding menopause, the changes that occur to health risks, and how this is impacted with obesity as a factor is paramount. Obesity is leading to chronic health conditions and premature death, reduction of obesity in post-menopausal women may reduce morbidity and mortality and increase quality of life (Marsh et al., 2023).

Available Knowledge

The process of review of current literature focused on current articles that included interventions that would be applicable in the clinical setting of family medicine. Pubmed, CINAHL, and UpToDate databases were utilized for a broad initial search. Postmenopausal women with a BMI > 30 have increased risks for many health concerns. Eating patterns change and physical activity reduction is common in the postmenopausal years (Lomardo, 2020). Postmenopausal women have some unique needs such as increased calcium needs and resistance exercise to promote bone health as an example. The evidence-based interventions for obesity in postmenopausal women point to a combination of exercise and healthy nutrition as the best treatment option versus solely utilizing a single modality (Cheng, 2018).

Exercise with resistance bands was found to reduce risk factors of metabolic syndrome in obese postmenopausal women. This was also clinically significant as bands are inexpensive and an effective treatment option (Son, 2021). Minimal aerobic exercise, such as walking, was found to be an activity that assisted in weight loss (Lombardo, 2020). Exercise that helps create a caloric deficit increases weight loss in postmenopausal women. Body movement in general has been correlated with weight loss, though the evidence-based specifics of what kind of body movement is best is still yet to be determined (Al-Zadjali et al., 2023).

Nutrition interventions in postmenopausal women according to the current research shows the Mediterranean diet is a style of eating that can assist in weight loss. Plant protein showed a statistically significant impact on reduction on loss of lean mass (Lombardo, 2020). Creating a calorie deficit by reducing calories consumed increased weight loss (Cheng, 2018). Eating patterns, such as snacking that includes fruits and vegetables, increased consumption of fiber and essential nutrients, with potential to

assist with weight loss. (Kong,2011). Nutrition and exercise interventions combined have been found to be the best treatment for weight loss in postmenopausal women. Statistically significant weight loss with the joint interventions were confirmed in recent research (Cheng, 2018).

In the future, more research should be conducted on the ideal nutrition style of eating for post-menopausal women. Physical activity or exercise can be a broad term and needs a definition for consistent program recommendations. When educating postmenopausal women on healthy lifestyles, nutrition and exercise education should be combined, customized, and used together for best practice.

Rationale

The problem at the family medicine clinical site that is the focus of concern is that of the negative health impacts that obesity causes and undertreatment of obesity by utilizing standard educational material to coach post-menopausal women. Treatment of obesity is complex and needs multiple therapies for the best outcome. Research is recommending that to reduce obesity and improve the health of post-menopausal women a healthy nutritional plan and physical activity program should be established. A formative framework of the quality improvement model (QI) will be utilized for constant measurements after a solid base data has been established. Plan-do-study-act, PDSA improvement model will be utilized to help identify if improvement has occurred.

When physical activity and healthy nutrition are combined, evidence has shown that this outcome is a reduced BMI (Cheng, 2018). A reduction in BMI and obesity can lead to decreased risk for and diagnosis of chronic illnesses. This intervention will be replicable and sustainable as it is evidence based and can be mass distributed to impact patients in a timely fashion, it is realistic, and achievable. The interventions of healthy nutrition education and physical activity recommendations will be taught in the clinical setting. Participants will then take the education and implement new behaviors in their personal environments.

Specific Aims

Post-menopausal women, with a BMI >25, will lose 10% of their body weight by the end of 12 weeks. Education on healthy nutrition and recommended physical activity will be provided at weekly virtual group sessions for 12 weeks, January 1 through April 3. A secondary aim of participants that complete the program is to show improvement in at least 1 area of menopausal symptoms, lipids, hemoglobin A1C or blood pressure. Reduction of a comorbid condition and/or obesity will be achieved by the end of 12 weeks. These changes will improve the health of postmenopausal women at the clinic.

Context

The clinic consists of a single provider and a medical assistant. Access to specialists as needed for consults is available through a local university hospital partnership. The provider reports to an offsite medical director several times a year. The provider is the supervisor for the assistant in the clinic and all operations, which includes quality assurance of care, medical assistant certification, and supervision of the onsite CLIA-waived lab. On a typical day, 8 to 12 patients are seen with various acute or chronic conditions. Wellness coaching is also provided in areas of weight management, diabetes, diabetes prevention, and hypertension control. All appointments can be virtual, phone, or in person for flexibility and as appropriate for chief complaint.

The clinic is located on the main campus of a private company and only serves employees, spouses, and children of the company. The clinic also serves regional offices of the company that are in multiple locations across the state. Quality improvement projects are supported and funded as needed and within budget constraints by the company serviced. The employer has won awards multiple times for being the “healthiest employer in the state” and supports wellness initiatives and projects. The employer of patients, which also pays for their medical insurance, including pharmaceutical coverage, has a partnership with the clinic to promote participation in wellness programs.

Interventions

A root cause analysis was developed to identify the most meaningful aspects of postmenopausal wellness to address (Appendix A). An article was prepared with details of the program and criteria to participate. This article was then posted on the company's homepage of their website, which included the clinic contact information to sign up. The article allowed for 14 days as an enrollment period. When the enrollment period ended, 30 patients contacted the clinic with interest in the program, this exceeded the goal group size. 14 participants were enrolled, to allow for natural attrition, and the other patients were contacted to be placed on the waiting list for the next program session.

Participants were contacted by the provider by email and scheduled for the group virtual sessions. Included in this email was the initial survey to gather their current weight, height, and blood pressure, as well as goals for themselves during the program (Appendix C2). As part of this initial survey Likert scales were used to obtain energy level, menopause symptoms, and quality of sleep. All the data findings were tracked via an excel spreadsheet. The provider gathered the most recent lipids and hemoglobin A1C through chart review, values must have been obtained within the last 6 months. If a patient had not had labs in the last 6 months they were contacted to schedule an in office draw or orders were sent to a local lab.

The following week after enrollment, weekly sessions started that were 30 minutes in length, facilitated by the provider and virtual using the teams platform. The provider was responsible for all virtual sessions and educational material. A prepared curriculum entitled "Healthy Weight for Me" was utilized to guide the 12 weeks. The quality improvement plan was to customize the program for postmenopausal, obese females with comorbid conditions to improve the population's health outcomes (Appendix B).

Postmenopausal women need customized coaching to promote bone and muscle health by adding in resistance training (Englert et al., 2023). Increased fiber, calcium, and vitamin D are unique needs for this group. Sleep may be impacted by hot flashes and hormone changes, care and treatment for these unique needs was addressed. A focus of nutrition was to increase protein to reduce loss of lean mass and increase satiety (Stephen et al., 2023). Weekly supplemental material compiled by the provider to augment the original healthy weight for me program was shared via chat and email (Appendix B). Weekly documentation in the EHR was completed utilizing a group charting template. Following completion of the program, the same questionnaire from week 1 was sent to participants to evaluate the impact of the customized group educational interventions (Appendix C2). Post-program lipids and hemoglobin A1Cs were gathered for comparison.

Measures

The outcome measures collected were patient weight, blood pressure, hemoglobin A1C, BMI, total cholesterol, sleep quality, menopause symptoms, and energy level. These measures were important to evaluate the improvement and impact on patient outcomes. Process measures tracked were the number of patients that have a pre and post weight in their chart. A second process measure tracked patients that had an appointment to evaluate lipids and A1C results. Tracking attrition and cause for attrition was an important process measure to use for future program development. Balancing measures observed were comorbid condition changes and job stress. These measures followed the recommendations of the Institute for Healthcare Improvement (IHI).

Metrics gathered were beginning and ending weights, session attendance, and changes in menopausal symptoms. The intended outcomes were to see weight loss and decreased incidence of menopausal symptoms in obese postmenopausal women. Patients self-reported their beginning and ending weights on the questionnaires. If the patient did not have a scale, they were mailed one by the

provider or the patient came into the clinic to be weighed to reduce the barriers of cost and access. A final measure assessed for stress and impact of response to the program was completing a pre and post program questionnaire and The Perceived Stress Scale [PSS] (Yilmaz & Kogar, 2024). Having metrics reported almost totally by questionnaire promoted efficiency and reliability of responses.

Data Management

Data was tracked in excel spreadsheets that were managed by the provider. This excel document was stored in the cloud for privacy and accessibility. Attendance was tracked by provider during weekly virtual sessions and recorded in the excel spreadsheet. Pre- and post-intervention weights were recorded in the electronic health record that is firewall and cloud protected by the provider as well as in an excel spreadsheet. Menopausal symptoms, sleep quality, and energy levels were gathered by the provider, documented in the excel spreadsheet at week 1 and 12 of the program. Pre- and post-questionnaires and the PSS were administered by emails sent by the provider and then documented in the cloud-protected excel spreadsheet.

Analysis

Quantitative data obtained during the program, January 2025-March 2025, was tracked. Data was separated to look at each metric individually and then compared to identify relationships between the data sets using correlation and t-tests in collaboration with a university-appointed statistician. After completing this analysis, values were plotted on several different charts to visually identify whether improvements were achieved (Figures A1 &A2). Scatter plots helped identify trends over time and the effectiveness of the interventions. Potential outside influences were monitored and annotated on the line graph (Figure A3).

During analysis, variation occurred due to attendance rates. Attendance was consistent with at least 6 participants each week. There were weekly inconsistencies as not every week contained the

same group of participants. Personal and social commitments made attendance in the program challenging and contributed to the variations in the data. This theme was inferred by the qualitative data gathered during the final questionnaire. Of the initial 14 participants, 10 participants reported post weights, 9 completed the pre- and post-questionnaires, and 8 participants completed the pre- and post-labs. Phone calls, messages through a healthcare portal, and work emails were utilized to encourage patient participation. Following the program completion, a 2 week window was allowed for participants to complete the questionnaire and labs. Seven attendees were successful at completing both final tasks for data gathering. No variation in data collection occurred as the provider was the only staff involved in input.

Results

Attendance throughout the program weekly was less than 100% (Figure A4). Topics discussed each week were different and designed to build upon each other. Variance in attendance had an impact on outcomes and resulted in the primary aim not being achieved. All participants completed their pre-program questionnaires and labs. Attendance saw a decrease at week 6, compounded with 1 participant withdrawing. The timing of future sessions should consider this and discuss emphasis on engagement (Figure A3). At completion of the 12-week program, 60% of patients had weight loss (Figure A1). The average total weight loss was lower than anticipated at 0.9% of participants body weight. The most significant finding was the reduction in menopausal symptoms correlation with attendance rates (r= - 0.60, P=0.05). The participants that attended the most sessions saw a greater reduction in their undesired menopausal symptoms than other participants. Average exercise minutes increased from (121.43 +/- 107.98) to (153.33 +/- 113.47). Even though the number of increased minutes were not statistically significant, the results were clinically significant. All participants that completed the post-survey saw improvement or no change in their energy levels.

Attendance was taken at every session to monitor attrition and participation. Following the 12-week sessions, 50% of patients completed the post questionnaire and labs and 64% completed the questionnaire alone. A problem that did arise that was unexpected was that of patients reporting lack of time for meal preparation and exercise because of heavy work loads. The assumption, as the patient's employer is supportive of a healthy workplace, was that the time needed for the healthy lifestyle behaviors would be supported. Physical activity and food tracking was recommended daily and during weekly sessions it was identified that this was difficult for many patients due to family and work schedules, this was a common theme and the final survey confirmed this as a factor during qualitative data gathering. Missing data at the conclusion of the program reinforces the theme of lack of time for wellness as 50% of participants did not complete the questionnaire and survey. The PSS was sent out with the initial and post questionnaires. It was returned by 4 patients at the beginning of the program and 1 at the end.

Discussion

A comparison of results with other similar studies showed similar outcomes and recommendations for the future. A recent study completed in a workforce environment found similar findings that personalized nutrition and health recommendations had better outcomes than when standard recommendations for the majority of the population were used (De hoogh et al., 2021). A recent literature review concluded that a multidisciplinary approach to weight and metabolic health is best addressed by patient centered care. The human metabolism is complex and treating changes that occur in menopause need to address sleep, mental health, nutrition, exercise, hormone therapy and medications. This literature review also found health coaching to be a useful modality to engage postmenopausal women and that more research is needed in the area of addressing the specific stage of postmenopause to enable the most patient centered strategies for weight and comorbid conditions reduction (Lowry & Kasianchuk, 2021). A third study that was reviewed focused on semaglutide and

hormone therapy, supported that medication plus hormone therapy as a weight loss option for postmenopausal women (Hurtado et al., 2024).

The customized material for this particular population, when presented in a group virtual setting, showed the ability to improve the health and wellbeing of the participants. The impact of personalized care resulted in improved biometrics which could lead to decreased medical costs and increased work productivity. The anticipated outcome of patients losing 10% of their body weight by the end of the program had contextual influences that were more significant than anticipated. Workload and family needs impacted the ability to participate in the healthy behaviors as recommended. A positive impact remains seen as analysis of attendance and biometrics shows improvements at the level of participation.

Summary

The key findings from this 12-week improvement project that were relevant to the primary and secondary aim were different than expected. Weight loss was not directly associated with attendance of sessions. The average body weight lost of participants was 1%, which did not meet the goal of 10% per participant. Menopausal symptoms showed the greatest area of improvement which is relevant to the secondary aim (Figure A2). The remainder of wellness factors, energy, sleep quality, exercise minutes, all saw an improvement. A clinically significant finding was that patients reported on the post-survey that addressing these topics was beneficial.

An area of strength of this project was the identification of the need for personalization and the ability to adjust topics along the way. The post-program survey answers repeatedly mentioned this as a strength during the qualitative data analysis. A second strength of the program was the route of administration. Virtual sessions created accessibility and convenience during participants' busy work

days. Peri- and postmenopausal women need customized programs to support the unique needs during this transitional time in their lives.

Ethical Considerations

The reporting structure of company participants, patients, can influence patients' transparency or participation as the enrollment process may have resulted in manager and subordinates being present in the same group. Self-care, such as regular movement breaks and boundaries for mental health were discussed and could be controversial if workload and stress level transparency is not possible with supervisors present, creating a conflict of interest. This was addressed during the first session by asking if anyone had any conflicts or concerns, and if so, they would be moved to a different group.

Confidentiality concerns may also have been present. The group setting and sharing of personal wins and struggles could create a harmful work environment or usage of personal information for others gains. With the sharing of personal information, a divide could occur regarding cultural or diversity of beliefs. This was addressed by ensuring that the environment was safe, ground rules for respect and confidentiality were discussed in the first session, and a brief reminder was given at the start of each session.

Limitations

As patients took time out of their busy schedules to attend their virtual sessions and exercise, attendance was impacted by their work schedules as evidenced by patient statements through virtual messages and emails. Gathering questionnaire responses and lab results were difficult after the program completion. Phone calls, emails, and virtual messaging was used to connect with patients and request completion of these items. Patients reported busy work schedules that did not allow for time, thus hindering a full data set for comparison. A completion incentive could be used in the future to motivate

patients to complete the final steps. Ample time of 2 weeks was provided for post program participation, yet this did not result in full involvement. Future interventions and program planning will need to identify strategies for employer buy-in and patient workload support.

Conclusion

Creating a thoughtful and evidence-based program, focused on peri and postmenopausal women was successful at improving quality of life by decreasing obesity, lipids, hemoglobin A1C, menopausal symptoms, and blood pressure. This program supports the need to emphasize customized care for this population in many wellness areas. The need for customization may also be transferable to other populations after identifying that different populations have unique needs. The program is sustainable since a virtual offering creates accessibility and low costs through the use of digital materials. The data set was small, but showed large opportunities for making a positive impact on postmenopausal patients' lives.

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Appendix A

Cause and Effect - Root Cause Analysis

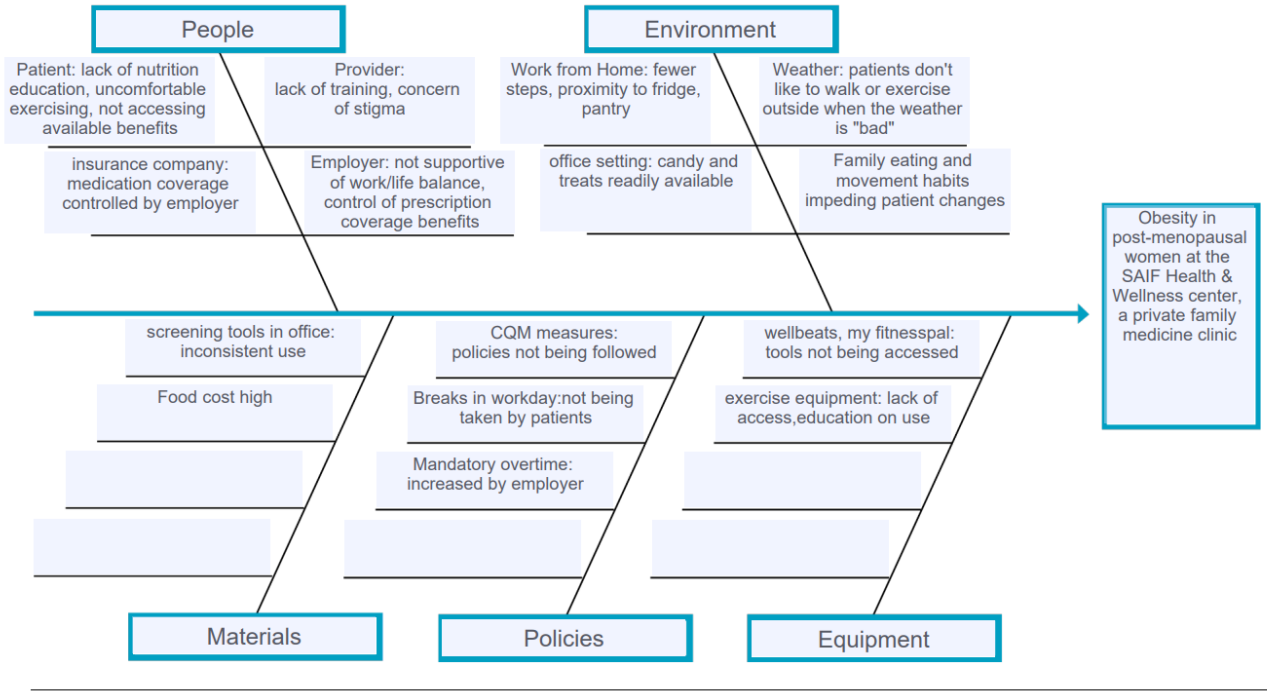


Figure A1.

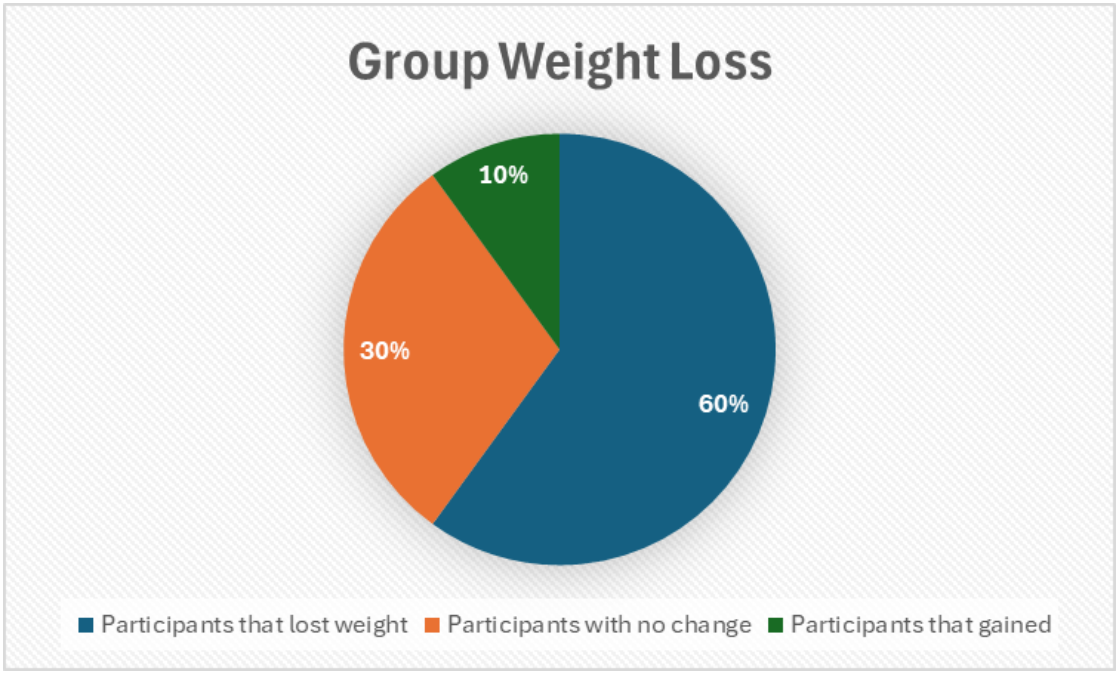


Figure A2.

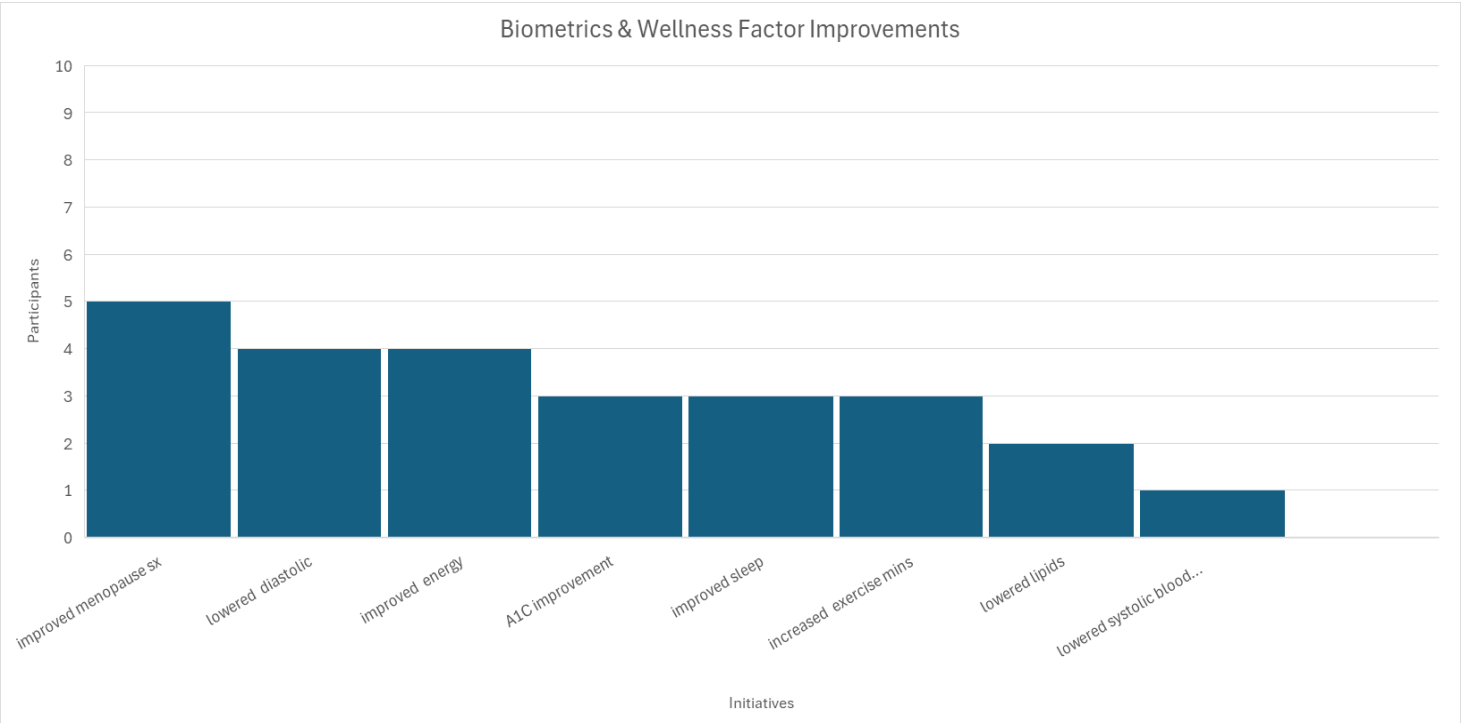

Biometrics & Wellness Factor Improvements
Participants
10
9
8
7
6
5
4
3
2
1
0
improved menopause sx
lowered diastolic
improved energy
A1C improvement
improved sleep
increased exercise mins
lowered lipids
lowered systolic blood...
Initiatives

Figure A3

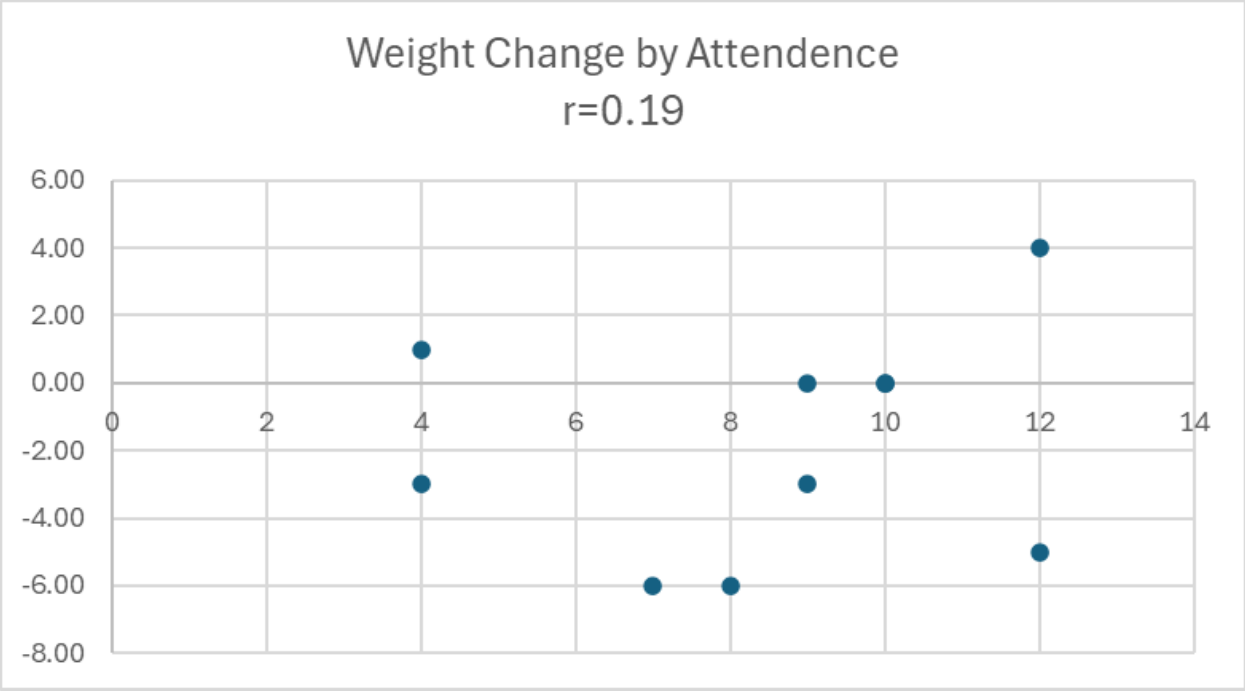
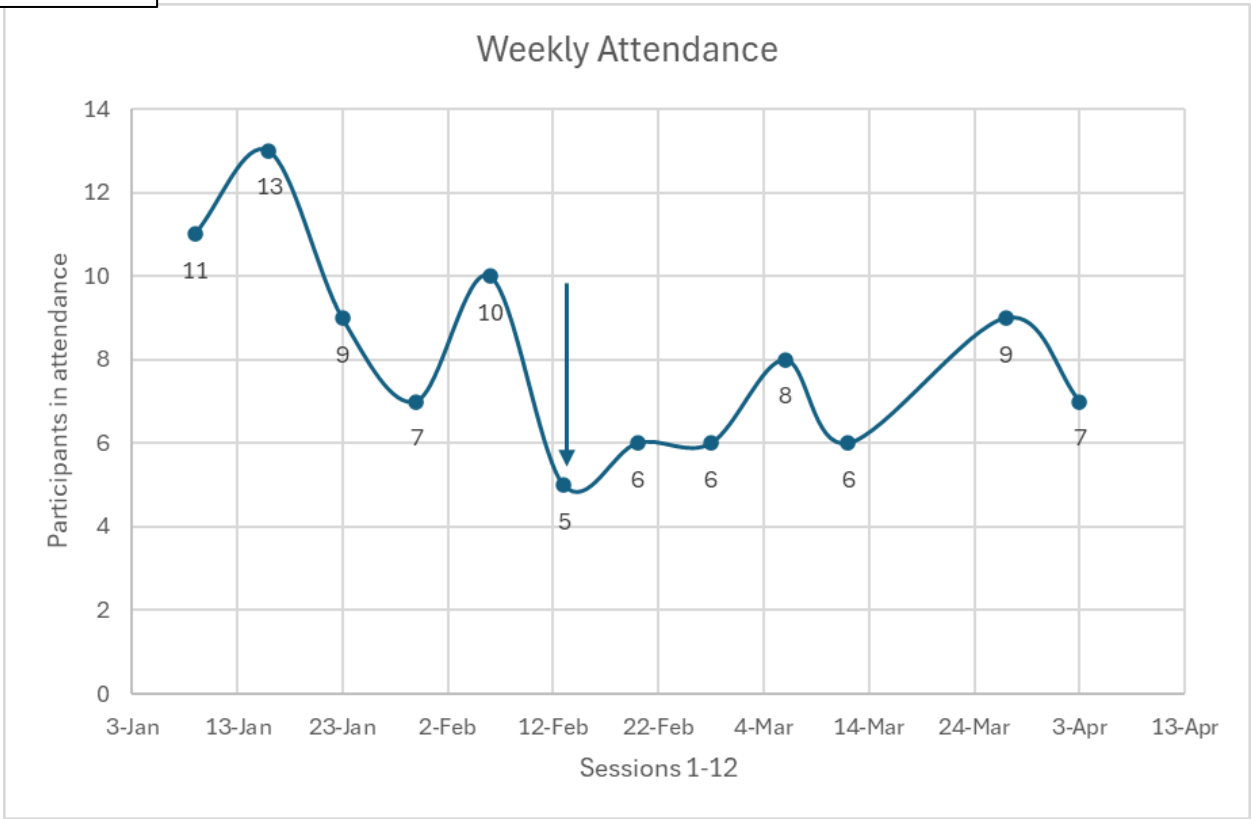

Weight Change by Attendence
r=0.19
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
0
2
4
6
8
10
12
14

Figure A4.


Weekly Attendance
Participants in attendance
0
2
4
6
8
10
12
14
11
13
9
7
10
5
6
6
8
6
9
7
3-Jan
13-Jan
23-Jan
2-Feb
12-Feb
22-Feb
4-Mar
14-Mar
24-Mar
3-Apr
13-Apr
Sessions 1-12

Appendix B

Quality Improvement changes by week to the “Healthy weight for me” program

Week 1	Add description of the importance for postmenopausal women to have balanced nutrition and exercise to benefit their health		Recipe pdf/cookbook emailed, provided by company		20 tips pdf handout emailed	Comp, A1C, Lipids drawn as part of standard program, pt self report weight/height for bmi, BP
Week 2	Add description of bone health and benefits of weight bearing exercise in postmenopausal women https://foodhero.org/sites/foodhero-prod/files/monthly-magazines/Older%20Adults%20CalciumVitD%20Monthly%202020.pdf		Add exercise options that overweight women would feel confident doing, add resources available through their health insurance/local services Vibration plate research https://pmc.ncbi.nlm.nih.gov/articles/PMC8226869/		https://www.healthline.com/health/fitt-principle#using-it (examples of using FITT)	https://www.hopkinsmedicine.org/health/conditions-and-diseases/staying-healthy-after-menopause#:~:text=Nutrition%20after%20menopause&text=After%20menopause%2C%20you%20should%20have,be%20increased%20to%208000%20IU.
Week 3	Meal planning https://nutritionsource.hsph.harvard.edu/meal-prep/		Calcium 1200mg daily or more, vitamin D 800mg or more		Send out perceived stress scale through group chat and email	https://www.das.nh.gov/wellness/docs/percieved%20stress%20scale.pdf
Week 4	Add link for chair yoga handout https://www.puregym.com/blog/chair-yoga-exercises-for-beginners-and-seniors/		Calcium and vitamin D Caltrate		Park, J., McCaffrey, R., Newman, D., Liehr, P., & Ouslander, J. G. (2017). A Pilot Randomized Controlled Trial of the Effects of Chair Yoga on Pain and	

					Physical Function Among Community-Dwelling Older Adults With Lower Extremity Osteoarthritis. *Journal of the American Geriatrics Society*, *65*(3), 592–597. https://doi.org/10.1111/jgs.14717 Article supporting adding chair yoga	
Week 5	Food noise can be treated with GLP-1 and other medication options if it becomes too much, other strategies include exercise, mindful eating, and increased frequency of eating.		Natural weight loss supplements: Berberine Ashwagandha Green tea Fenugreek tea Berberine Fiber(goal 25mg a day for women, 35mg a day for men) Rhodiola (may increase energy and stamina) Chromium		https://www.webmd.com/obesity/features/what-is-food-noise	https://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/#:~:text=Magnesium%20is%20a%20cofactor%20in,%2C%20oxidative%20phosphorylation%2C%20and%20glycolysis. Magnesium article
Week 6	Add Lyra information, mental health free resource for patients		Sound bath		Stress impact on menopause https://www.taramd.com/post/adrenal-health-in-	https://nutritionsource.hsph.harvard.edu/collagen/ collagen

					perimenopause	article
Week 7	Add wellbeat, free app/fitness resource for patients Stretching in menopause Bloating Pelvic floor exercises		CVD leading cause of death in postmenopausal women		https://www.wellbeats.com/	Fruits that have a low glycemic index https://www.healthline.com/health/best-low-sugar-fruits#cantaloupe
Week 8	Benefits of soy to post menopausal women https://nutritionsource.hsph.harvard.edu/soy/		Soy once a week, isoflavones Reduce BPA exposure Common food additives and chemicals harmful to children - Harvard Health		https://nutritionsource.hsph.harvard.edu/soy/ https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/bpa/faq-20058331	https://www.epa.gov/system/files/documents/2023-10/final-virtual-pfas-explainer-508.pdf
Week 9	Hypocaloric 500 calories a day, 5-7 servings of fruits and vegetables a day. https://pmc.ncbi.nlm.nih.gov/articles/PMC6947726/		Fiber 25gram a day, fiber handout list http://www.nourishinteractive.com/system/assets/free-printables/374/top-healthy-high-fiber-foods-list-printable-nutrition-chart-boost-fiber-rich-foods-list.pdf?1312928912		Macros and how to determine what the need is per individual situation	
Week 10	Mayo sleep article https://www.hopkinsmedicine.org/health/wellness-and-prevention/how-does-menopause-affect-my-sleep#:~:text=Often%2C%20poor%20sleep%20sticks%20around,quality%2C%20uninterrupted%20sleep%20per%20night. Late night snacking makes us		Options for hotflash treatment: black cohosh, DIM, cooling pads, cooling sheet, estoven https://ods.od.nih.gov/factsheets/BlackCohosh-HealthProfessional/		s/sx of OSA, what is a sleep study https://www.hopkinsmedicine.org/health/wellness-and-prevention/what-to-know-about-an-at-home-sleep-test	RLS and treatment options https://pubmed.ncbi.nlm.nih.gov/38461462/ Blue light filter may not actually help

	more hungry https://hms.harvard.edu/news/late-night-eating-impact					
Week 11	Traveling during the holidays can make it hard to get in fruits and vegetables How to prepare for weekend success Menopausal food cravings, how to reduce with increasing protein: https://obgyn.onlinelibrary.wiley.com/doi/10.1111/1471-0528.17290		Pack dried fruit, no sugar added Travel with a lunch box and ice pack to keep vegetables and fruits cold, put the ice pack in the freezer at your lodging so it's ready for the next day/adventure Social eating research: https://www.birmingham.ac.uk/news-archive/2019/people-eat-more-when-dining-with-friends-and-family-study		https://www.eatright.org/food/planning/away-from-home/quick-guide-to-eating-right-while-traveling-in-the-us	https://newsinhealth.nih.gov/2016/11/healthy-holiday-foods-fun
Week 12	https://pmc.ncbi.nlm.nih.gov/articles/PMC10383994/ Evidence that individual nutrition plans and group sessions increases weight loss in postmenopausal women		https://obgyn.onlinelibrary.wiley.com/doi/10.1111/1471-0528.17290 Protein research			Post labs: comp, lipids, A1C, BP, Wt which can be self reported Post program survey sent out

Appendix C

Figure C1.

Wellness Reset Intake Questionnaire

Would you like the wellness center to call you to schedule an appointment for labs or consultation prior to starting the 12 weeks program?*

Yes/No

Name*

Email*

Phone number*

Beginning weight*

Height*

Blood pressure in the last month*

Current weekly minutes of exercise*

Please rate your **quality of sleep**: 1 is poor, 5 is excellent*

1

2

3

4

5

Please rate your degree of **menopausal symptoms**: 1 is minimal, 5 is severe (hot flashes, brain fog, weight gain, mood change) *

1

2

3

4

5

Please rate your **energy level**: 1 is low, 5 is excellent *

1

2

3

4

5

Dietary restrictions?

Vegetarian,Vegan,Kosher,Gluten-free, Other:

Health Goal*

Have you had a Hemoglobin A1C, comprehensive metabolic panel and lipid panel in the last year?*

Yes

No

Not sure

Figure C2.

Wellness Reset Feedback

Thank you for participating in the wellness program. I hope that you found it helpful and improved your healthy behaviors in your life.

I want to hear your feedback so I can keep improving our content. Please complete this quick survey and let me know your thoughts.

How satisfied were you with the program?*

Not very

1

2

3

4

5

Very much

What were your key take aways from this program?

Short answer text

Current weight*

Blood pressure in the last week*

Please rate your degree of **menopausal symptoms**: 1 is minimal, 5 is severe (hot flashes, brain fog, weight gain, mood change) *

1

2

3

4

5

Please rate your **energy level**: 1 is low, 5 is excellent *

1

2

3

4

5

Please rate your **quality of sleep**: 1 is poor, 5 is excellent*

1

2

3

4

5

Current weekly minutes of exercise*

Did you experience any of these benefits by the end of the 12 weeks?

Which topics did you find most relevant?*

1.Not relevant 2.Relevant 3.Very relevant 4.Did not attend session:

Meal planning

Exercise

Emotional health

Sleep

Hormone balancing

How to handle weekends/special events

Do you prefer virtual or in person sessions?

Any additional comments regarding the program?

Short answer text