

Effect of Non-Hormonal Treatment Options on Reducing the Vasomotor Symptoms among Menopausal Women

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Abstract:

Menopause is the point in a woman's life when she has not had a menstrual period for one year. The primary symptom of peri-menopause is the vasomotor symptoms (VMS). Many postmenopausal women have hot flashes and night sweats. Lifestyle changes are effective and safe options for management of hot flashes. Also marjoram can reduce the negative effects of menopause. **Aim of the study:** To reduce the intensity and frequency of VMS among menopausal women. **Subjects and Methods:** A quasi experimental **design** with pre and post-test was used. **Setting:** This study was carried out at the primary health care center in Al- Ghory village at Menoufiya Governorate, Egypt. **Subjects:** a total of 100 menopausal women participated in the study. Data collection tools included structured interviewing questionnaire and VMS assessment questionnaire. **Results:** near to three quadrants of the women were aged from 45-50 years old. Regarding to drinking tea and coffee, there were statistical significant differences ($P < 0.001^*$) between pre and post-test. Also there were big changes in the methods of dealing with VMS such as using cotton bed linens and using well-ventilated bed room (85%) in the post test. In addition, the intensity and frequency of VMS and the time of its occurrence decreased from 78.0% to 57.9%. **Conclusion:** non-hormonal treatment options (lifestyle changes and marjoram) are viable for the treatment of VMS in menopausal women. It can reduce the intensity and frequency of VMS. **Recommendations:** encouraging a healthy lifestyle, eating a healthy diet and avoiding dietary triggers such as spicy, hot foods, pickles and caffeine to reduce the intensity and frequency of the VMS.

Key words: Menopause, Vasomotor Symptoms (VMS), Hot Flashes, Lifestyle, Marjoram.

1.Introduction:

Menopause is the final menstrual period.[1] It is one year without menses.[1] It can be diagnosed only a year after it occurs, when it is clear that the last menstrual period was truly the final one. Peri-menopause consists of three components: the period shortly before menopause, menopause itself, and the year following menopause. In addition, post-menopause is the period beginning at the time of the final menstrual period.[1] The primary symptoms of peri-menopause are VMS (eg, hot flashes, night sweats), menstrual cycle changes (ie, oligo-menorrhoea, amenorrhoea), and vaginal dryness. Secondary symptoms include sleep disturbance, stress urinary incontinence, mood changes, and somatic complaints. [1]

Researchers stated that, many postmenopausal women have hot flashes and night sweats. A hot flash is described as a feeling of intense heat in the face, neck and chest. It lasts, on average, four minutes, ranging from a few seconds up to 10 minutes or more. Hot flashes are accompanied by skin flushing, warmth, and sweating, usually of the chest and face. These episodes often accompanied by palpitations and anxiety.[4] Women struggling with hot flashes report poorer sleep patterns and interference with mood and concentration.[5]

The results of a research study reported that, about two-thirds of all women experience hot flashes, and 10-20 percent of them find the flushes very distressing.[6] The most common ages at onset of moderate-to-

severe hot flashes were 45–49 years.[7] More than 75% of women report hot flashes within the 2 years surrounding menopause. Among these women who have hot flashes, 25% report that these symptoms remain for greater than 5 years, and 10% report that they remain for more than 10 years.[8] For most women, hot flashes resolve over a period of several years, but in a small minority of women (10-15%), the symptoms may persist for extended periods of time.[9]

A study performed by **Stearns et al.**, [10] identified several risk factors for hot flashes such as low-circulating estrogen concentrations, low-percent ideal body weight, lack of exercise, and smoking.[11, 12] The severity and duration of hot flashes varies greatly among women, but it seems that, in general, African Americans and women of low socioeconomic status suffer more severe symptoms.[13, 14] Also, several studies have suggested that women who undergo early or abrupt menopause suffer especially severe symptoms.[12] It has been speculated that, hot flashes are considerably less common among Asian women, possibly owing to their soy rich diets.[15, 16]

VMS are the predominant reason that women seek medical treatment around the time of menopause.[8] Various treatment options include lifestyle changes, hormonal agents, non-hormonal pharmacotherapy (including antidepressants), and alternative medicine therapies and behavioral interventions.[4] Hormone therapy with estrogen is considered the most effective treatment for VMS.[17] However, recent research shows that long-term use of estrogen increases the risk of serious adverse effects, and women and their health care providers are looking for alternatives.[18, 19] A policy of use of acupuncture in addition to self-care can contribute to a faster reduction of VMS, but probably has no long term effects.[20]

Lifestyle modifications should be the first-line approach for women with menopausal symptoms **Sikon et al.**, [21] because the lifestyle changes are an effective and safe option for the management of hot flashes. Therefore, symptomatic women should be encouraged to wear light, layered clothing, use portable fans at the desk and bedside, and replace hot beverages with cold ones. It was thought that obese women would have fewer hot flashes than thin women, due to higher circulating estrogen levels from increased aromatization in adipose tissue. Interestingly, several large, well-designed epidemiologic studies, have demonstrated the opposite; specifically, that an elevated body mass index is a risk factor for hot flashes.[22, 23] In addition to weight loss, exercise should be encouraged. Although actively engaging in exercise may increase hot flashes due to an increased body temperature, women who are physically fit may have fewer hot flashes.[24, 25] Woman should stop smoking, as nonsmokers have fewer VMS than do smokers.[22] Women can adopt healthy behaviors in an effort to minimize hot flashes and night sweats.[26] Keep body temperature cool by use a fan, choose cold food and drinks or sleep in cool room. Physically active women report fewer hot flashes than do sedentary women. Other healthy lifestyles such as eat a healthy diet, and avoid dietary triggers to hot flush occurrence (Such as spicy/hot foods, caffeine, and alcohol) can help to reduce hot flashes.[26, 27]. Oregano is related to the herb marjoram, oregano also being known as wild marjoram. It is a perennial.[28,29]. Oregano is high in antioxidant activity, due to a high content of phenolic acids and flavonoids.[30, 31] In the traditional Austrian medicine *Origanum vulgare* herb has been used internally (as tea) or externally (as ointment) for treatment of disorders of the gastrointestinal tract, respiratory tract, and nervous system.[32] Oregano oil can aid irregular menstruation and reducing the negative effects of menopause.[33] Eating of progesterone-boosting foods such as spices like turmeric, oregano, and thyme all help body with the process of making progesterone.[34]

Significance of the study:

VMS is the primary symptoms of peri-menopause.[13] Many postmenopausal women have hot flashes and night sweats.[4] Women struggling with hot flashes report poorer sleep patterns and interference with mood and concentration.[5] About two-thirds of all women experience hot flashes, and 10-20 percent of them find the

flushes very distressing.[6] More than 75% of women report hot flashes within the 2 years surrounding menopause.[8] VMS are the predominant reason that women seek medical treatment around the time of menopause.[8] Lifestyle modifications should be the first-line approach for women with menopausal symptoms **Sikon et al., [21]** because the lifestyle changes are an effective and safe option for the management of hot flashes. Women should be encouraged to wear light, layered clothing, use portable fans and replace hot beverages with cold ones.[22, 23] Also women can adopt healthy behaviors in an effort to minimize hot flashes and night sweats.[26] Other healthy lifestyles such as eat a healthy diet, and avoid dietary triggers to hot flush occurrence can help to reduce hot flashes.[26, 27]. Added to that, oregano can aid irregular menstruation and reducing the negative effects of menopause.[33] Eating of progesterone-boosting foods such as spices like oregano help body with the process of making progesterone.[34]

2. Aim of the study: the aim of the current study was

- 1- To reduce the intensity and frequency of VMS among menopausal women.

2.1 Research hypothesis:

- 1- Changing the lifestyle will reduce the intensity of VMS among menopausal women.
- 2- Applying the non-hormonal treatment options (healthy lifestyle and marjoram) will reduce the frequency of VMS among menopausal women.

3. Subjects and Methods:

3.1 Research Design: Quasi experimental design with pre-and post-test was used to achieve the aim of the current study.

3.2 Setting: The study was carried out at primary health care center in Al- Ghory village at Menoufia Governorate, Egypt.

3.3. Subjects: A total of 100 menopausal women recruited from women attending the primary health care center in Al- Ghory village at Menoufia Governorate, Egypt. The researchers selected the women who met the following inclusion criteria: aged 45 years and more, alert and agree to participate in the study and suffer from VMS.

3.4 Data collection tools: Two tools were used and consisted of :

1- The structured interviewing questionnaire: which included the following :

- a- Socio-Demographic characteristics such as age, education, occupation and income.
- b- Clinical data included: Questions about the women complaints, past and present medical histories of chronic disorders, and medications for management, obstetric history and menstrual characteristics of the menstruated women.
- c- Measurements: included weight, height (body mass index), pulse and blood pressure.

2- Vasomotor symptoms assessment questionnaire:- it included 47 questions about the presence of VMS, its intensity, time of occurrence, frequency, duration, precipitating & lifestyle factors, symptoms associated with it, and methods of dealing with VMS.

3.5. Content validity and reliability: Tools were submitted to a panel of five experts in the field of Maternity Nursing, Obstetric Medicine and Community Health Nursing to test the content validity. Modifications were carried out according to the panel judgment on clarity of the sentences and appropriateness of the content. Reliability test was assessed by applying the questionnaire on 10 women using test-retest.

3.6 A pilot study was conducted on 10 participants that were not used for the final study, the outcome was collected and necessary corrections were modified.

3.7. Field work:

Procedure for Data Collection: Data collected for 3 days per week through interview with each menopausal female by the researchers individually using study tool. The aim of the study was explained to give assurance of confidentiality of information offered, and to gain their maximum cooperation. Consent was obtained. This procedure divided into three phases as following:

3.7.1 Assessment phase: Each participant needs 20-30 minutes to complete the research questionnaires. All types of history were collected from the subjects; physical examination was done for the participants and body mass index (BMI) also calculated for the participants. The researchers explained the subjects and the procedures which implemented for them causes of vasomotor symptoms; and the effect of changing the lifestyle and drinking Marjoram on reducing the intensity of the VMS.

3.7.2 Implementation Phase:

The researchers explained that changing the lifestyle daily will reduce the intensity of VMS like hot flashes and night sweating and how to change the life style, eat a healthy diet and avoid dietary triggers such as spicy, hot foods, pickles and caffeine to reduce the intensity and frequency of the VMS. As well as, the researchers explained that drinking the marjoram three cups daily will reduce the intensity of the VMS (such as hot flashes, night sweating, nervousness, insomnia etc..). Also, the methods of preparation of Marjoram drink, times of drinking, frequencies of drinking, and the packages of Marjoram were given and explained for the menopausal participants. An appointment also was taken from the women after one month.

3.7.3 Evaluation Phase : After one month, the researchers met the women again and collect the data again (post practice of changing the life style) and drinking Marjoram three or two cups per day.

4. Human Rights and Ethical Considerations:- The subjects were chosen according to the criteria and they were interviewed after their informed consent was obtained to participate in the study. The researchers approached each woman by giving her an overview of the study, explained the procedures and reassured the subjects that their privacy would be protected, and that any obtained information would be strictly confidential.

4.1 Statistical analysis:-The collected data were coded for entry and analysis (SPSS) statistical soft ware package version 17. Data were presented using descriptive statistics in the form of frequencies and percentage. Quantitative variables were presented in the form of means and standard deviation. Statistical significance was considered at p- value <0.05.

5. Results:

Table (1) shows the percentage distribution of the sample according to socio demographic data. Regarding to the age, near to three quadrants of the women (71%) was ranged from 45-50 years old, while only few percentages (4%) were 60 & over 60 years old. Most of the sample was married 89% & only 7% of the sample was widow. Only 9% of the sample was highly educated compared by near to half of the sample 49% were only read and write. Also near to one third of the sample were illiterate. More than two thirds of the sample (69%) was housewife while only 6% were employee & also 15% had hard working.

As it was shown in table (2), the mean weight of the sample was 81.2 Kg, while the mean height was 1.59 meter. Near to two thirds of the sample (61%) were obese, also near to one quadrant (21%) were overweight, and only 8% of the sample had morbid obesity. There was only near to one third (31%) of the women had passive smoking & more than one half of the sample (57%) were practicing walking sports.

Table (3) shows that, more than three quadrants of the sample (77%) had menarche at 9-12 years old,

while only 23% had menarche at 13-15 years old. Also, more than two thirds of the sample (68.4%) was married before 20 years old. Regarding to obstetric history, 95% had previous pregnancies & deliveries, and only 5% of the women had neither pregnancies nor deliveries.

Table (4) shows that, there was statistical significant differences ($P < 0.001^*$) regarding to eating spicy food, where there were near to three quadrants (70%) in posttest compared to (94.0%) in the pretest of the sample had spicy food in their food. There were no statistical significant differences ($P > 0.05$) regarding to eat a lot of sweets, a lots of salted food, and more eating pickles. Regarding to drinking teas and coffee, there were statistical significant differences ($P < 0.001^*$) between pre and posttest.

As it was shown in table (5), there were statistical significant differences ($P < 0.001^*$) ($P < 0.05^*$) between pre and posttest regarding to drink milk and use the fan as methods of dealing with VMS. Also, there were big changes in the methods of dealing with VMS among the women such as using cotton bed linens (100%) and using well-ventilated bed room (85%) in the post test.

Table (6) illustrated that, there were statistical significant differences ($P < 0.001^*$) regarding to hot flashes (frequency & when occur) and insomnia. The percentage of hot flashes among the studied women decreased to 88% after changing the life style and drinking marjoram. In other words, the frequency of VMS among the studied women decreased in posttest, also the time of occurrence decreased from 78.0% to 57.9. Regarding to insomnia, the majority of women (89.0%) had good sleep after changing the life style and drinking marjoram. There was no statistical significant differences ($p > 0.05$) regarding to nervousness as a related symptoms of VMS.

Figure (1) illustrates the distribution of the studied sample according to post intensity of hot flashes. Most of women (85.2%) had mild degree of hot flashes post drinking the marjoram and changing the life style. Also, only 13.6% of them had moderate degree and very little percentage (1.2%) had severe degree of hot flashes post drinking the marjoram and changing the life style. As it was shown in figure (2) distribution of the studied sample according to post intensity of the VMS, there were three quadrants of the sample (75%) had mild degree of the symptom, also 12% of the sample had no symptoms and moderate degree. Finally, there was only 1% of the sample had severe degree of the VMS in the post test. Figure (3) shows the relationship between dose of marjoram and intensity of VMS. More than one quadrant of the sample (26.7%) had no symptoms in post drinking the Marjoram three cups per day, while only 9.4% of the sample had no symptoms in post drinking the Marjoram two cups per day. Although, there were high percentage of the sample (60% & 77.6%) had mild symptoms in post drinking the Marjoram three and two cups per day, there was not any woman of the sample suffered from severe symptoms in post drinking the Marjoram three cups per day.

Table (1): Distribution of the Sample According to Socio-Demographic Data.

Socio-Demographic Data.		N	%
Age groups :	45 - 50	71	71.0
	50 - 60	25	25.0
	60 +	4	4.0
Marital status :	Married	89	89.0
	Single	2	2.0
	Widow	7	7.0
	Divorced	2	2.0

Level of education :	Illiterate ₂	31	31.0
	Read and write.	49	49.0
	Secondary ₂	10	10.0
	Post-secondary ₂	1	1.0
	High education ₂	9	9.0
Occupation:-	Housewife .	69	69.0
	Employee .	16	16.0
	Hard working.	15	15.0

Table (2): Distribution of the Sample According to Chronic Disease, BMI, Smoking and Activity Factors.
 N= 100

Factors.	N	%	
Chronic disease:	_No	84	84.0
	Yes	16	16.0
	N=16		
	-hypertension	4	25.0
	- diabetes	7	43.75
- other	5	31.25	
Taking medications regularly:			
-Yes	58	58.0	
- No	42	42.0	
Weight:-	81.2 ± 10.6		
Height:-	1.59 ± 7.4		
BMI:	1	1.0	
- Under weight	9	9.0	
- Normal	21	21.0	
- Overweight	61	61.0	
- Obese	8	8.0	
-Morbid obesity	32.3 ± 5.5		
Passive smoking:-			
-yes	31	31.0	
-No	69	69.0	
Walking:-			
- Rarely	2	2.0	
- Occasionally	41	41.0	
-Always	57	57.0	

Table (3): Distribution of the Sample According to Obstetric History

Obstetric History	N= 100	
	N	%
Age of menarche:		
9-12	77	77.0
13-15	23	23.0
Age of marriage :	N=98	
-Less than16	10	10.2
-17-20 year	57	58.2
-21-25 year	31	31.6
Number of pregnancies G:-		
- 0	5	5.0
- 1-3	71	71.0
- 4-6	24	24.0
Number of deliveries P:	N=95	
- 1-3	71	74.7
- 4-6	24	25.3
Age of menopause:-		
40-45	79	79.0
45-50	20	20.0
50+	1	1.0

Table (4): Distribution of Studied Sample According to Dietary Habits Changes During the Pre and Posttest.

Dietary factors	Studied sample n=100		
	Pre	Post	P- value
	%	%	
Eat spicy food :	94.0	70.0	P<0.001*
-yes	6.0	30.0	
- no			
Eat a lot of sweets	45.0	52.0	p>0.05
- Yes	55.0	48.0	
- no			
Using a lot of Salted food :-	47.0	13.0	p>0.05
yes	53.0	87.0	
-no			
Eating of pickles:-	69.0	63.0	p>0.05
-rarely	11.0	37.0	
- occasionally	20.0	0.0	

-always			
Drink tea daily :	- no	52.0	65.0
		48.0	35.0
- yes		N=48	N=35
		43.75	100.0
*1-3cup/day		56.25	0.0
*4-6cup/day			
Drink	coffee:		P<0.001*
- rarely		61.0	62.0
		27.0	25.0
- Occasionally		12.0	1.0
		0.0	12.0
- always			
-never			

Table (5): Distribution of the Sample According to Pre and Post Changes in Methods of Dealing with VMS.

How to deal with VMS	Studied sample n=100	
	Pre	Post
1-use cotton bed linens	82.0	100.0
- yes	18.0	0.0
- No		
2- drink milk	69.0	77.0
- yes	31.0	23.0
- No	P< 0.001*	
3-well-ventilated bed room	58.0	85.0
- yes	42.0	15.0
- No		
4- Use the fan:-	9.0	63.0
-yes	91.0	37.0
-No	P < 0.05*	

Table (6) : Distribution of Studied Sample According to VMS During the Pre and Post Test.

Vasomotor Symptoms	Pre	Post	P- value
Hot flashes:-	100.0	88.0	P<0.001*
-N0	0.0	12.0	
- rarely	4.0	61.0	
- occasionally	72.0	20.0	
-always	24.0	7.0	
Frequencies of daily hot flash:	0.0	12.0	
-no occur	32.0	88.0	
- 1-3 / day	68.0	0.0	
- 4-6 / day	14.0	30.7	
When ?	8.0	11.4	
- during daytime	78.0	57.9	
- at night			
- at any time			
- fatigue :-			p>0.05
- yes	50.0	26.0	
- no	50.0	74.0	
-Insomnia :-			P<0.001*
- yes (Can't sleep)	85.0	11.0	
- no (Good sleep)	15.0	89.0	
nervousness:-			p>0.05
- yes	83.0	43.0	
- no	17.0	57.0	

Fig.(1) : Distribution of the Studied Sample According to Post Intensity of Hot Flashes

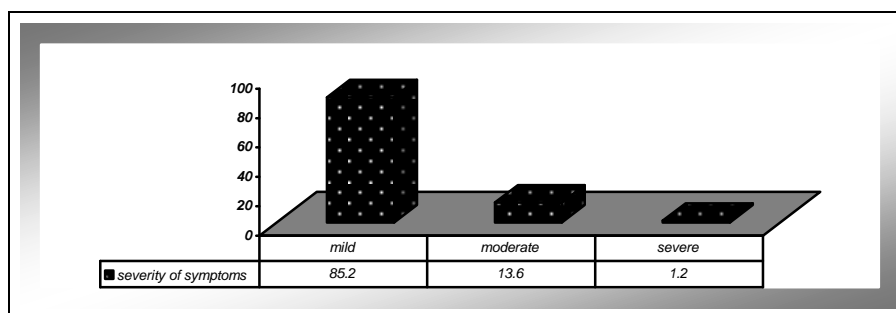


Fig.(2) : Distribution of the Studied Sample According to Post Intensity of the Vasomotor Symptoms

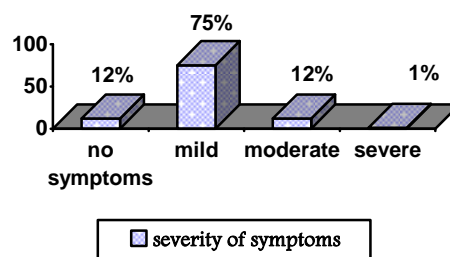
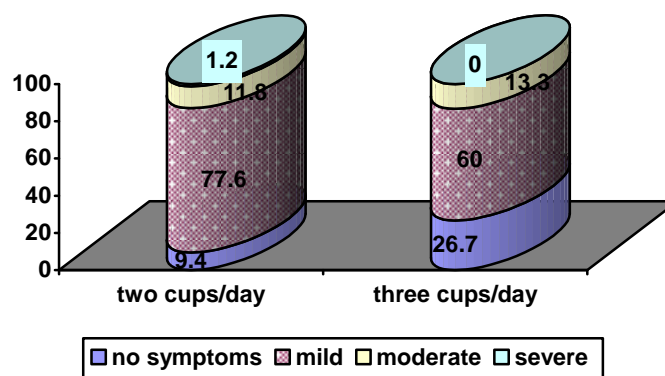


Fig.(3): Relationship Between Dose of Marjoram and Intensity of VMS



6. Discussions:

Many postmenopausal women have VMS.[4] Lifestyle modifications should be the first-line approach for women with menopausal symptoms **Sikon et al., [21]** because the lifestyle changes are an effective and safe option for the management of VMS. [22] Healthy lifestyles such as eat a healthy diet, and avoid dietary triggers to hot flush occurrence can help to reduce VMS.[26, 27] Added to that, eating of progesterone-boosting foods such as spices like oregano help body with the process of making progesterone.[34] the aim of the current study was to reduce the intensity and frequency of VMS among menopausal women.

Regarding to socio-demographic characteristics' of the studied sample, the results of the present study revealed that, the age of most of participated women was ranged from forty five to fifty years old (table1). These results were in agreement with **Yakout et al., [35]** who showed that, slightly more than one half (54.17%, 50.83% respectively) of the study subjects were aged fifty to fifty five years old and had primary or preparatory education respectively. During a research study, performed by **Cardini et al., [36]** they explained that, most of the sample, including women aged 45-65 years. Further that, the current research stated that, more than two thirds of the sample was house wife (table1), this comes in agreement with **Yakout et al., [35]** who explained that, half of the study subjects were housewife. Also, the results of the study which described alternative medicine use amongst Italian women transitioning through menopause by **Cardini et al., [36]** were in agreement with the result of this study which indicated that, alternative medicine is utilized less frequently in Bologna [37-39]. According to the 2005 multi-scope survey conducted by the Italian National Institute of Statistics (ISTAT), 20.4% of Italian women aged 45-55 years, and seventeen percent of women aged 55-64 years old.

Regarding to obstetric history of the studied subjects, the present study indicated that, more than three quadrants of the sample had menarche age from 9- 12 years old, and more than one half of the women had married early. Near one quarter of the studied women had previous pregnancies number ranged from four to six pregnancies (table 3). This comes in accordance with **Yakout et al., [35]** who studied the menopausal symptoms and quality of life among Saudi women in Riyadh and Taif and reported that, more than one third of the study subjects had more than nine children; most of them were multi-Para, which proved that, Saudi women were high parity.

Management of VMS includes lifestyle modifications and vitamin supplements.[40] The combination between the lifestyle and using of herbal therapy are more helpful to relieve the vasomotor symptoms. Regarding to change in life style, the present study reported that, there was statistical significant differences regarding to changing the life style in the form of avoid eating spicy food, limit drinking of tea and coffee between pre

and posttest (table 4). Also it indicated that, as a result of increased the awareness about importance of changing the life style generally. There was more than half of the sample were practicing walking sports (table2). These results were within agreement with **Nahidi et al., [41]** they proved that, there was a respect significant effect of life style changes on health. It is necessary to focus on instructions about daily exercise, coping strategies with stress, cool liquids, cold living environment and foods containing phytoestrogen for menopausal women.

Although hormone therapy is effective for the treatment of VMS, results from the Women's Health Initiative (WHI) demonstrate that, hormone replacement therapy may have negative effects on breast tissue, as its use has been associated with an increased risk of breast cancer.[42] The WHI also shows that, unopposed estrogen therapy is associated with an increased risk of endometrial cancer.[42] The WHI has also shown that, hormone replacement therapy is associated with an increased risk of cardiovascular disease. VMS negatively affect on quality of life **Blumel et al.,** and **Thurston & Joffe [43,44]** so, management of VMS through lifestyle modifications had no side effect on the women.[40] The present study revealed that, there were statistical significant differences between pre and post test regarding to drink milk and use the fan as methods of dealing with VMS (table 5) which supported by **Umland & Falconieri ; Cardini et al.,** and **Reed et al., [40, 36, 45].**

A research study performed by **Nahidi et al., [41]** explained that, hot flash is the primary symptom of menopause and most of the women suffer from it in different levels. It denotes sudden redness of skin, neck and chest with a feeling of hotness in the trunk ending up with severe perspiration. The present study indicated that, the hot flashes was the most common symptom among women in menopausal age, the percentage of it was hundred percent pre and it decreased to eighty eight percent during posttest after changing of their lifestyle (table 6). These results were supported by **Yakout et al.,** and **Sturdee et al., [35, 46]** who denoted that, hot flash is the characteristic and most common menopausal symptom together with night sweats and disturbed sleep that can have a major impact on quality of life. Also the current study indicated that, there were statistical significant differences ($P < 0.001^*$) regarding to frequencies and time of occurrence hot flashes and insomnia after changing the life style and drinking marjoram. These results were in contrast with **Nahidi et al., [41]** who studied the effects of Licorice on relief and and reduce the recurrence of menopausal hot flashes. They proved that, no significant difference between the groups before the therapy in terms of the frequencies. Mean frequencies of hot flash reached from 7.70 ± 0.45 before the therapy to 6.43 ± 0.94 at the end of the 8th week and returned to 7.66 ± 1.02 at the 4th week of follow-up.

Regarding to the intensity of hot flashes, the present study demonstrated that, most of studied women had mild degree of hot flashes, only thirteen percent of them had moderate hot flashes and very few percentage had severe degree during the posttest (figure 1). These results were in agreement with **Nahidi et al., [41]** who indicated that, hot flash intensity decreased in both groups from the beginning of the therapy. Also, many researches discussed the herbal treatment for hot flashed.[36,40, 47] Another studies focused on the effects of phytoestrogen in valerian on hot flash over 2 months. Before and 1 month after as well as before and two months after therapy, a significant difference was found in the frequency and intensity of hot flashes.[41,47]

7. Conclusion: Upon evaluation of this trial, the results of present study demonstrated that, non-hormonal treatment options (lifestyle changes and marjoram) are viable for the treatment of VMS in menopausal women. It can reduce the intensity and frequency of VMS. Also changing the life style in eating, drinking, walking, change the type of food and avoid exposure to smoking help in reducing the VMS.

8. Recommendation:-

- Encourage women to eat a healthy diet and avoid dietary triggers such as spicy, hot foods, pickles and caffeine to reduce VMS.
- Encourage lifestyle modifications for bad habits to reduce the intensity and frequency of the VMS.
- Encourage healthy life style all over the woman life.

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