

Effectiveness of Soya Beans on Somatic and Vasomotor Symptoms among Menopausal Women Residing In Selected Community

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ABSTRACT

“Woman is the glory of creation” -Jules Michelet.

“Woman is a miracle of divine contradictions”. Nature takes her through a series of transitions from birth to death, which includes menarche, pregnancy, labour, motherhood and menopause. Each of this stage stands for different phases in her life which includes both physical and psychological changes. Menopause is the time in women life, when the functions of the ovaries cease. Perimenopause means “the time around menopause” and often refer to the menopausal transitional period.

Keywords: *Menopause symptoms, Effect of Soya beans on menopause, Soya Beans on Somatic and Vasomotor Symptoms,*

INTRODUCTION

Women are given the opportunity to enjoy life and to improve their health then the family as a whole will reap the benefits. But women experience various turning points in her life cycle, which may be developmental or transitional. The transitional changes of a girl start when she attains menarche. Similarly another vital event in women is pregnancy and childbirth, where the women become the mother – the revolutionary act. At last women will reach the stage of menopause in which various physiological and psychological changes will take place. But these are usually neglected by most of the women [1].

Bimal, 2018 Menopause is one of the woman’s most important life stages. It marks the end of menstruation leading to woman’s aging process when she cannot become pregnant. In other words, it is the physiological cessation of the menstrual cycle associated with advancing age. It is a

natural process .that happens to every woman as she grows older and not a medical problem, disease or illness, even though it may appear so. Some woman may have a hard time because of the changes of hormone levels during menopause. The average age of menopause is 52 but it can happen anytime between the ages of 42 and 56. A woman can say that she has entered menopause when she has not had periods for a full year [2].

Nayak, 2016 stated that most women welcome the end of monthly bleeding, bloating and inconvenience, often leading to frustration in life. For some, it is a time of personal growth and renewal, and to others, it is a challenging period of difficult physical and emotional changes as they find that menopause affects sex life, triggers mood swings, causes debilitating hot flushes and takes them down the road to bone and hearing problems. Each woman reacts to menopause differently. It

varies from one woman to another; 2 and varies among women of different countries and cultures. A woman's experience of menopause can be related to many things including genetics, diet, lifestyle, social, and cultural attitude towards older women [3].

Omekawa, 2001 Menopausal women suffer from deleterious effects of lowered estrogen levels including reduction of bone mass, hot flush, breathing difficulty, headache, muscle pain, joint pain, faint, dizzy, irritability, excitable, nervous, loss of interest in sex, crying spells and hypercholesterolemia. Those effects are pronounced during menopause because of drastic estrogen reduction. Phytoestrogens can potentially alleviate hypoestrogen related deleterious effects. Menopause is often accompanied by vasomotor symptoms such as hot flushes and night sweats. Psychological symptoms such as irritability, anxiety, difficulty sleeping and depression, and somatic symptoms such as decreased libido, fatigue and body ache [4-6].

Many women choose not to use Hormone Replacement Therapy, or to use it only for a short time. If you don't want to or cannot take Hormone Replacement Therapy, there are a lot of supplements including herbs, vitamins and minerals and homeopathic remedies that many women find helpful. If osteoporosis is a concern, there are ways other than the use of Hormone Replacement Therapy to prevent and treat bone loss. Changes in lifestyle, diet, and exercise are also beneficial. Soya bean is commonly called as wonder bean since it is an excellent source of nutrients such as proteins, fats, carbohydrates, vitamins and minerals. It contains 43 grams of proteins per 100gms which is the highest among the pulses. It also contains 19.5gms of fat, 21gms of carbohydrate and provides 432 kcal per 100gms [7-8].

Schonberg Wee., (2015) it has been estimated that hot flush incidence is far lower in Asian countries than in the west. Although it is possible that these data are influenced by the reluctance of Asian women to discuss these issues. Between 70 - 80 % of women in the universe and Europe report having hot flush. While only 10 - 20 % of women in Japan, Singapore and China report such symptoms [9]. Given the fact that the soya bean typically consumed in the Asian diet contains the phytoestrogen isoflavones, it has been suggested that soy consumption may be responsible for this difference in symptoms. Recent data suggest that average consumption of isoflavones in Japan is between 15 - 30 mg per day. Whereas in U.S. and in Europe it is 1-2 mg per day [10]. It has thus been suggested that soya consumption may be an effective substitute for post-menopausal than Hormone Replacement Therapy. In fact, recent studies performed in the U.S and Australia suggests that between 16 - 34 % post-menopausal woman consume soya foods and supplements. Soya is being the most common supplement taken by women who reports the reduction of vasomotor symptoms [11-13].

Kanta, 2012. A woman is likely to experience health problems-physical and psychological symptoms-caused by hormonal changes. Physical symptoms: 62% experienced hot sensation, 46% had headache, 58% suffered insomnia, 48% obtained weight gain, 70% had joint and muscle pain, 54% developed back pain, 44% lacked interest in daily activities, and 46% 8 developed dry skins. Psychological symptoms: 68% had mood swings, 54% developed anger, 54% experienced fatigue, 52% worried during the time of menopause, 40% developed nervousness, and 48% felt depression during the time of menopause [14-15].

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of soya beans on somatic and vasomotor symptoms among menopausal women residing in selected community area at Vellore district, Tamilnadu.

OBJECTIVES

- 1) To assess the somatic and vasomotor symptoms of menopausal woman residing in selected community area in the experimental and control group.
- 2) To evaluate the effectiveness of soya beans supplementation on somatic and vasomotor symptoms among experimental and control group of menopausal woman.
- 3) To find out the association between post test scores of somatic and vasomotor symptoms among menopausal women in the experimental, control group with their selected demographic variables.

OPERATIONAL DEFINITIONS

Effectiveness

In this study it refers to the level of reduction of somatic and vasomotor symptoms in menopausal women in the experimental group by using Modified Greene Climacteric Menopausal Symptom Assessment Scale.

Soyabeans

In this study it refers to 50gm of boiled soya beans supplementation given along with their meals to the menopausal women once a day for 30 consecutive days.

Somatic Symptoms

In this study it includes Dizziness or fainting, Tiredness, Headache, Muscle and joint pain, Palpitation, Breathing difficulty, vaginal dryness and labia itching Feeling tense

Vasomotor Symptoms

It Includes Hot flushes and night sweats

Menopausal Woman

It refers to woman after the cessation of menstruation.

Selected Community Area

The selected community area includes two villages namely viruthempet and senur in Vellore district, Tamil Nadu.

HYPOTHESIS

Research hypothesis

H1. There is a significant difference between pre and post test scores of somatic and vasomotor symptoms among menopausal women in the experimental group.

H2. There is a significant difference between the post interventional level of somatic and vasomotor symptoms of menopausal women between the experimental and control group.

H3. There is a significant association between the posttest scores of somatic and vasomotor symptoms among menopausal women and selected demographic variables in the experimental, control group.

Assumptions

- 1) Menopausal women aged above 45 years may experience somatic and vasomotor symptoms.
- 2) Soya bean supplementation may bring a change in the level of somatic and vasomotor symptoms among menopausal women.
- 3) Reduction in the level of somatic and vasomotor symptoms may improve the quality of life among menopausal women.

Delimitations

The study is delimited to only menopausal women aged 45 – 65 years with somatic and vasomotor symptoms at selected villages in Vellore district.

REVIEW OF LITERATURE

Review of literature in this study was organized under the following headings:

Part–A: Literature related to somatic and vasomotor symptoms among menopausal woman.

Part – B: Literature related to effect of soya beans on menopausal symptoms.

METHODOLOGY

Research Approach

An evaluative research approach was used in this study.

Research Design

The research design used for the present study was Quasi experimental design where pretest and posttest with control group design was selected.

Setting of the study

Setting for the present study included two selected community areas in Vellore district, Katpadi namely Viruthempet and Senur, which is 2kms away from Vellore and 3 kms away from Katpadi. Total population of viruthempet is 13031. In that female population has 6548, out of which 2271 women were above the age of 45 years. Total population of senur was 1981. In that female population is 903 out of which 480 women were above the age of 45 years.

Population

The population for the present study was menopausal woman between 45 – 65 years who have attained menopause and were residing in katpadi at Vellore district.

Sample

The sample selected for the present study were menopausal woman between 45 – 65 years with somatic and vasomotor symptoms who were residing in viruthempet and senur community area at

Vellore district and those who met the inclusion criteria.

Sample Size

The total sample size was 60 menopausal women, out of which 30 were in the experimental group and 30 were in the control group.

Sampling Technique

Snow ball sampling technique was used for the present study.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

- 1) Menopausal woman ≥ 45 years and with somatic and vasomotor symptoms.
- 2) Who were normal physiological processes with somatic and vasomotor symptoms?
- 3) Who gave their oral consent to participate in the study.
- 4) Who were present during the period of data collection?
- 5) Who could understand and speak Tamil or English

Exclusion Criteria Menopausal Woman

- 1) Who had undergone Hysterectomy?
- 2) Who were receiving hormone replacement therapy?
- 3) Who were receiving anticancer therapy?

INSTRUMENT FOR DATA COLLECTION

Section: A

This section consisted of information about demographic attributes such as age of the women, marital status, occupation, educational status, religion, dietary pattern, personal habits and previous sources of information regarding soya bean supplementation on reduction of somatic and vasomotor symptoms among menopausal women.

Section: B

It consisted of Modified Greene Climacteric Menopausal Symptom Assessment tool. It is a standardized tool used to assess the somatic and vasomotor symptoms among menopausal woman. Based on this scale, the level of somatic and vasomotor symptoms can be categorized into mild, moderate, and severe and the score 1-10 for mild, 11-20 for moderate and 21-30 for severe somatic and vasomotor symptoms respectively.

Reliability

The structured tools were used by the investigator. In order to establish the reliability of the tool, test retest method was used. Pearson correlation coefficient was calculated $r = 0.82$. Hence the tool was reliable and was used in this study.

Validity

The tool was prepared by the investigator, based on literature review, under the guidance of experts and on the basis of objectives, was assessed, evaluated and approved by the experts in the field. The content validity of the tool was obtained from 9 experts, 5 in the field of Obstetrics and Gynecological Nursing, 2 Gynecologists, one statistician, and one epidemiologist.

Scoring Procedure

The instrument consists of modified Greene climacteric menopausal symptoms assessment tool used for menopausal women with somatic and vasomotor symptoms. Maximum score was three and the minimum score was one and the net total number of score was 30. The percentage is calculated by using the formula as follows. Obtained score interpretation = $\frac{\text{Total Score}}{30} \times 100$. Based on the percentage of scores the level of symptoms was graded in 3 categories.

They are “Mild”, “Moderate” and “Severe”

Score Interpretation

Level of Symptoms	Actual Score	Score Percentage (%)
Mild	1 – 10	Less than 33 %
Moderate	11-20, 34 to 67	33 to 67 %
Severe	20-30, 68 to 100	68 to 100 %

Data Collection Procedure

Prior to the collection of the data, permission was obtained from the Panchayat president of viruthempet, Vellore district, Tamil Nadu. The main study was conducted among the women, who met the inclusion criteria, by using snowball sampling technique.

The investigator introduced her to the women and established a good rapport with them. The demographic attributes were collected from the menopausal women with somatic and vasomotor symptoms pretest was done with the help of modified Greene climacteric menopausal symptoms assessment tool, and 50gms boiled soya beans was supplemented to experimental group and posttest was done on 31st day for both the experimental and control group.

Plan for Data Analysis

Both descriptive and inferential statistical analysis was used in this study. Data was organized, tabulated and analyzed by using Descriptive statistics. Mean, standard deviation and paired ‘t’ test were carried out to assess the effectiveness of soya beans supplementation. Chi-square analysis was done to associate post test scores of somatic and vasomotor symptoms among control and experimental group of menopausal woman.

Major Findings of the Study

- 1) Pre-test and posttest level based on somatic and vasomotor symptoms based on the modified Greene

- climacteric menopausal symptoms assessment tool. On the pre-test day most of the menopausal women 20(66.67%) had severe symptoms, 8(26.67%) had moderate symptoms and 2(6.67%) had mild symptom in the experimental and 18(60.00%) had severe symptoms, 7(23.33%) had moderate symptoms and 5(16.67%) had mild symptoms in control group. On posttest day, there was a marked reduction in the level of somatic and vasomotor symptoms from severe 20(66.67%) and moderate 8(26.67%) to mild 21(70.00%) and 9(30.00%) among experimental group as compared to control group.
- 2) In the experimental group, overall mean of somatic and vasomotor symptoms among menopausal women was 22.30, with the standard deviation of 4.44 in pretest and the mean in posttest was 12.56 with 2.58 standard deviation.
 - 3) In the control group, overall mean of somatic and vasomotor symptoms among menopausal women was 21.36, with the standard deviation of 5.20 in pretest and the mean in posttest was 21.30 with 4.94 standard deviation.
 - 4) In the experimental group, the mean and standard deviation of improvement score for effectiveness of soya beans on somatic and vasomotor symptoms among 30 menopausal women was significant with, mean 9.73, standard deviation 5.14, confidence interval upper 11.65, lower 7.81, 't' value 10.36 and p value <0.05.
 - 5) In the control group, it revealed that the mean and standard deviation on somatic and vasomotor symptoms among 30 menopausal women was not significant where mean 0.66, standard deviation 1.04, confidence interval upper -.32, lower .45, 't' value .34, df value was 29 and p value was <.730.
 - 6) The computed 't' value (6.63) $pp < 0.05$ with the mean difference of 1.10000 shows that there was significant difference between the postinterventional level of somatic and vasomotor symptoms among experimental and control group. Thus the finding revealed that soya bean supplementation was effective in reducing the somatic and vasomotor symptoms among menopausal women.
 - 7) There was no significant association between the post test scores of both experimental and control group with demographic variables ($P > 0.05$). Hence the differences observed in the mean scores values were only by chance and not true difference. It seems that soya beans were effective to all menopausal women irrespective of their demographic variables.

HYPOTHESIS TESTING

H1. There is a significant difference between pre and post test scores of somatic and vasomotor symptoms among menopausal women in the experimental group.

Null hypothesis Ho1. There is no significant difference between pre and post test scores of somatic and vasomotor symptoms among menopausal women in the experimental group.

The data presented shows that the overall mean of somatic and vasomotor symptoms among menopausal women was 22.30, with the standard deviation of 4.44 in pretest and the mean in posttest was 12.56 with standard deviation of 2.58. There is a significant difference between pre and post test scores of somatic and vasomotor symptoms among menopausal women in experimental group. The result reveals that the soya milk was effective on reduction of somatic and vasomotor symptoms among experimental group. Therefore null

hypothesis (**H01**) was rejected and hence the research hypothesis (**H1**) is accepted.

H2. There is a significant difference between the post interventional level of somatic and vasomotor symptoms of menopausal women among experimental and control group.

Null hypothesis Ho2. There is no significant difference between the post interventional level of somatic and vasomotor symptoms of menopausal women among experimental and control group. The data presented in shows the computed 't' value(6.63) $p < 0.05$ with a mean difference of 1.10000 which indicates that there was significant difference between the post interventional level of somatic and vasomotor symptoms among experimental and control group. Thus the finding revealed that soya bean supplementation was effective in reducing the somatic and vasomotor symptoms among menopausal women. Therefore null hypothesis (**H02**) was rejected and research hypothesis (**H2**) was accepted

H3. There is a significant association between the post test scores of somatic and vasomotor symptoms among menopausal women and demographic variables in both the experimental and control group.

Null hypothesis Ho3. There is no significant association between the post test scores of somatic and vasomotor symptoms among menopausal women and demographic variables in both the experimental and control group

The data presented shows that there was no significant association between the post test scores of both experimental and control group with demographic variables ($P > 0.05$). It seems that soya beans were effective to all menopausal women irrespective of their demographic

variables. Hence null hypothesis (**H03**) was accepted and research hypothesis (**H3**) was rejected in relation to demographic variables with 5% level of significance.

CONCLUSION

- 1) From the findings of the study it can be concluded that the highest percentage of woman were between the age group of 51 - 55 years. Most of them were house wives, majority were non-vegetarians and had the habit of tobacco chewing. *f*
- 2) Soya bean was highly effective on somatic and vasomotor symptoms in experimental group.
- 3) There was a significant effectiveness on experimental group than control group menopausal women in somatic and vasomotor symptoms. *f*
- 4) No significant association was observed between experimental and control groups post test scores of menopausal women with their demographic variables.

IMPLICATIONS

Implication for Nursing Practice

- 1) The nursing personnel working in hospital can reinforce the health benefits of soya beans.
- 2) Nurses should have adequate knowledge regarding the importance of soya bean in menopausal women, so that they could teach the women about its importance to reduce the menopausal symptoms and improve the quality of life.

Implication for Nursing Education

- 1) Nurse as an educator plays a major role in educating the students regarding pre and postmenopausal symptoms. Hence the nurse educator should educate the nursing professionals about the effectiveness of soya beans on somatic and vasomotor symptoms of menopausal women.

Implications for Nursing Administration

- 1) With advance technology and ever growing challenges of women's health, the college and hospital administration should have a responsibility to provide nurses, nurse educator and student nurse with continuing education on recent advancement in improving knowledge and skills on women's health.
- 2) The study finding will help the administrator to allocate budget in order to arrange Continuing Nursing Education programme for student nurses and staff nurses regarding management of menopausal symptoms alternatively thus in turn helps to improve the quality of life.

Implications for Nursing Research

- 1) The findings of the study opens a big avenue for research on innovative methods of creating awareness, development of teaching materials and setting up of multimedia centers for teaching and creating awareness among women, nurses, public and other health care professionals.
- 2) The study findings will reveal the current knowledge status about menopausal symptoms and the extent to which the knowledge should be improved.
- 3) Further research in this area will help nurses to find out complementary therapies to reduce somatic and vasomotor symptoms.
- 4) This will motivate other investigator to conduct studies in future regarding the same topic.

RECOMMENDATIONS

Based on the findings of the study the following recommendations have been made for the study.

- 1) A similar study can be carried out on a large sample size to generalize the findings.

- 2) A similar study can be conducted for 6 months or 1 year period of time to see the long term effects.
- 3) A study can be conducted to assess the knowledge of menopausal women on complimentary therapies during menopause.
- 4) A comparative study can be conducted to assess the effectiveness of different non – pharmacological management for menopausal symptoms.

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