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A Pre- experimental Study to Evaluate the Effectiveness of Boiled Soyabeans on Menopausal Symptoms Among Post Menopausal Women at Selected Rural Area, Krishnagiri.

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Abstract: Background: Menopause is a normal stage in the life of a woman, which is accompanied by hormonological changes that result in many physical and mental symptoms, influence the overall well-being and quality of life. To reduce these symptoms, effective and cost-effective administration strategies are needed. **Aim:** A research study was conducted to assess the impact of soybean intake on postmenopausal symptomatic women. **Methodology:** A quantitative study design was a pre-experimental, one-group, pretest posttest study design. The research was carried out on postmenopausal women who were selected using convenience sampling method. A structured questionnaire and Modified Greene Climaker Scale were used to gather the data. The intervention was to administer soybean in the form of daily consumption during a certain period after which an assessment in the same tool would be done**. Results:** The results indicated that the prevalence of moderate to severe menopausal symptoms in most of the women was observed prior to the intervention. The consumption of soybean led to a significant change, and the severity of the symptoms decreased and moved towards the milder levels. Statistical result showed that there was a great improvement in menopausal symptoms. It was also found that there was a significant relationship between the menopausal symptoms and certain demographic factors, including education, occupation, family type and number of children. **Conclusion:** The researchers find out that soybean consumption is an effective, natural, and cost-effective intervention to reduce menopausal symptoms and enhancing the quality of life in postmenopausal women. Maintaining ethical principles, patient safety, and fair access is crucial as regenerative treatments are still developing in the clinical practice.

Keywords: Menopause, soyabean consumption, symptoms

INTRODUCTION

Menopause is a natural phase in the life of a woman, characterized by irreversible menstrual inhibition as a result of a decreased ovarian activity and estrogen levels. It is usually established following 12 months of amenorrhea and is connected with physiological and psychological alterations. Menopause in women normally occurs between the ages of 45-59 years with most of them complaining of hot flushes, night sweats, dizziness, irritability, insomnia and depression. Hormonal changes during menopause lead to reduced bone mass, metabolic alterations, cardiovascular risks, and emotional disturbances. Management includes hormonal and non-hormonal therapies, along with lifestyle and dietary modifications. Soya beans (Glycine max), rich in phytoestrogens such as isoflavones (genistein and daidzein), have been shown to reduce menopausal symptoms, especially hot flushes.

Given the prolonged post-menopausal lifespan and symptom burden, awareness, early management, and cost-effective natural interventions like soy-based diets are essential to improve women's health and quality of life.

AIM OF THE STUDY

The study aimed to evaluate the effect of soyabean consumption in reducing the menopausal symptoms between the experimental group.

METHODOLOGY

The evaluative design adopted a quantitative approach and. The study was conducted among 60 postmenopausal women selected using a non-probability convenience sampling technique.

Women aged 45–56 years who had attained natural menopause and were willing to participate were included, while those with medical illness or on hormone replacement therapy were excluded. Following the pretest, the intervention involved administering 50 grams of boiled soybeans daily for 21 days.

A posttest was conducted on the 22nd day using the same scale to evaluate changes in symptoms. Data analyzed with descriptive and inferential methods.

RESULT

In the experimental group, most participants were aged 49–52 years (38.33%), followed by 45–48 years (35%) and 53–56 years (26.66%). Regarding education, 30% had primary education, 25% secondary education, 23.33% higher secondary, and 21.66% were illiterate. Occupationally, 28.33% were housewives and an equal proportion were coolie workers, while 23.33% were government employees and 20% were private employees.

With respect to family type, 35% belonged to nuclear families, 33.33% to extended families, and 31.66% to joint families. Monthly income showed 36.66% earning less than ₹5000, while 31.66% each were in ₹5000–10000 and above ₹10000 categories.

All participants (100%) were married. Most participants (86.66%) followed a non-vegetarian diet, while 13.33% were vegetarian. Regarding number of children, 28.33% had more than four children, 26.66% had one child, 23.33% had none, and 21.66% had two to three children. (Table 1)

The table shows that in the pre-test, the majority (73.33%) had moderate symptoms and 26.66% had severe symptoms, with none in the mild category. In the post-test, improvement was observed with 21.66% shifting to mild symptoms and no participants remaining in the severe category, while most (78.33%) remained in the moderate level. (Table 2)

Table 3 indicates that the pre-test mean score of menopausal symptoms was 54.05 (SD = 11.5) and it dropped to 38.81 (SD = 6.8) in the post-test. The average percentage also dropped to 71.8 as compared to 74.04 with the difference of the mean percentage being 2.24. The t-value of 12.9 obtained was statistically significant which implied that the intervention was effective in alleviating menopausal symptoms.

Table 4 shows a strong correlation between the degree of postmenopausal symptoms and the following demographic characteristics, education, occupation, type of family and the number of children. Thus, H2 is accepted with these variables and rejected with the other demographic variables.

DISCUSSION

The study findings showed that the majority of postmenopausal women experienced moderate to severe menopausal symptoms in the pre-test. After the intervention, an improvement was observed, with some women shifting to the mild category and no participants remaining in the severe level, although most continued to have moderate symptoms.

Additionally, a significant association was observed between menopausal symptoms and selected demographic variables. These results highlight the effectiveness of soybean as a simple and cost-effective intervention for managing menopausal symptoms.

CONCLUSION

The researchers conclude that the use of soybean is an efficient, natural, and economical intervention in terms of alleviating the symptoms of menopause among postmenopausal women. The results revealed that the level of symptoms was significantly reduced after the intervention. Moreover, some demographic variables like education, occupation, family form, and children were identified to affect menopausal symptoms.

Further studies can be conducted with a larger sample size to enhance generalizability, and a true experimental design with a control group may be adopted to strengthen the validity of findings. Replication of the study in different settings and populations is recommended to ensure wider applicability. Extending the duration of intervention and follow-up would help in assessing the long-term effectiveness of soybean consumption.

Comparative studies with other non-pharmacological interventions may also be undertaken. Additionally, awareness programs should be organized to educate women on menopausal management and the benefits of dietary modifications, and soybean supplementation can be promoted as a cost-effective, natural strategy in community health practice.

Table 1: Distribution of postmenopausal women. N=60

S. No	Demographic data	Frequency	(%)
1.	Age		
	a) 45- 48 yrs	21	35%
	b) 49- 52 yrs	23	38.33%
	c) 53- 56 yrs	16	26.66%
2.	Education		
	a) Illiterate	13	21.66%
	b) Primary	18	30%
	c) Secondary	15	25%
	d) Higher	14	23.33%
3.	Occupation		
	a) House wife	17	28.33%
	b) As Coolie	17	28.33%
	c) Private	12	20%
	d) Government	14	23.33%
4.	Family Type		
	a) Nuclear family	21	35%
	b) Joint family	19	31.66%
	c) Extended family	20	33.33%
5.	Monthly Income		
	a) < 5000	22	36.66%
	b) 5000- 10000	19	31.66%
	c) > 10000	19	31.66%
6.	Marital Status		
	a) Married	60	100%
	b) Not married	0	0
7.	Diet Pattern		
	a) Vegetarian	8	13.33%
	b) Non vegetarian	52	86.66%
8.	Number Of Children		
	a) 1	16	26.66%
	b) 2-3	13	21.66%
	c) >4	17	28.33%
	d) No children	14	23.33%
9.	When Did You Attain Menopause		
	a) Before 1 yrs	15	25%
	b) Before 2 yrs	15	25%
	c) Before 3 yrs	16	26.66%
	d) > 3 yrs	14	23.33%

Table 2: Distribution of Menopausal Women in Pre-test and Post-test.

Menopausal Symptoms	Pre-test Frequency	Pre-test (%)	Post-test Frequency	Post-test (%)
Mild	0	0%	13	21.66%
Moderate	44	73.33%	47	78.33%
Severe	16	26.66%	0	0%

Table 3: Comparison of means score among postmenopausal women.

Test	Mean	Standard Deviation	Mean Percentage	Mean % Difference	t Value
Pre-test	54.05	11.5	74.04	2.24	12.9
Post-test	38.81	6.8	71.8		

Table 4: Chi-square test between the variables and symptoms

S. No.	Demographic data	Pre-Test		
		Df	Chi square	Table value
1	Age	2	1.66	4.30
2	Education	3	8.92 (S)	3.18
3	Occupation	3	3.54 (S)	3.18
4	Family type	2	5.15 (S)	4.30
5	Monthly income	2	0.361	4.30
6	Marital status	1	0	12.71
7	Dietary pattern	1	0.85	12.71
8	Number of children	3	6.11 (S)	3.18
9	When you attain menopause	3	1.18	3.18

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