EFFECTIVENESS OF SOYABEANS ON MENOPAUSAL SYMPTOMS IN POSTMENOPAUSAL WOMEN AT SELECTED RURAL COMMUNITY AREA, SALEM

By

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CERTIFICATE

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"My soul proclaim the greatness of the lord

My spirit exalts in God my saviour"

- Luke 1:46-47

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ABSTRACT

A Study was conducted to Evaluate the Effectiveness of Soyabeans on Menopausal Symptoms in Postmenopausal Women at Selected Rural Community Area, Salem.

Pre-experimental research design was adopted. Non-Probability convenience sampling technique was used to select 60 samples. Structured interview schedule was used to collect the demographic variables and modified Greene Climacteric Scale was used to assess the menopausal symptoms among postmenopausal women. The investigator soaked 1kg and 50grams of soyabeans overnight and in the morning, boiled the soyabean in water with salt to taste in the house of a sample and administered 50 grams to each postmenopausal women for 3 weeks. The findings showed that 26(43%) postmenopausal women were between the age group of 53-56 years and most of the postmenopausal women 42(70%) were illiterates, 40(67%) postmenopausal women were housewives and 29(48%) were from joint family and majority of postmenopausal women 56(93%) monthly income was less than Rs.5000, all of them 60(100%) were married, 53(88%) of them were non vegetarian, 31(52%) of postmenopausal women were having 2-3 children and 27(45%) of them had menopausal period more than three years. In pre test 35(58%) postmenopausal women had moderate symptoms and 25(42%) had severe symptoms, whereas in post test majority 58(97%) had moderate symptoms and only 2(3%) had mild symptoms and none of them had severe menopausal symptoms. During pre test the overall mean score percentage was 60% (57.13±9.39) whereas in post test the overall mean score percentage was 44% (42.35±7.27). The pre and post test mean score difference was 14.78. It was found that there was a reduced menopausal symptoms after administration of soyabeans. The 't' value of 29.22 at $P<0.05$ level suggests that soyabeans had significant effect on menopausal symptoms among postmenopausal women. Hence H_1 was retained. The chi-square value (10.99*) revealed that there was significant association between the level of menopausal symptoms among postmenopausal women with their type of family at $P<0.05$ level, whereas there was no association found between the level of menopausal symptoms with other demographic variables. Hence H_2 was retained. Soyabean is one of the alternative and complementary therapies which were found to be effective in reducing menopausal symptoms among post menopausal women.

CHAPTER – I

INTRODUCTION

Menopause is a Greek word typically means “meno” – month’ “pause”- stop; that means the cessation of menses. It is the point at which the menstruation ceases. Menopause is the end result of cessation of ovarian function. The term menopause, climacteric, pre, peri and post menopause are often used loosely and interchangeably but strictly applied to different periods at the end of reproductive life in human female. **(D.C.Dutta, 2009)**

The term climacteric is derived from the Greek word “kilmakter” (critical period), meaning the critical period of life, and is applied to the 5-15 years before the menopause, when the endocrine and other changes begin, and to the 5-15 years after the menopause when menopausal symptoms are most acute. **(D.C.Dutta, 2009)**

The end of the women’s reproductive life is marked by the gradual cessation of menstruation. The menstrual cycles first becomes irregular and then ceases altogether at the menopause. **(Cooper & Fraser, 2003)**

Menopause is a normal part of life like puberty. It is started from the age group of 42-56 years, symptoms can begin several months or years before that and these symptoms can last for months or years. **(National Institute of Aging, 2006)**

The term “post menopause” applies to the whole of a woman’s life after the menopause, extending into old age when the pathological changes due to loss of ovarian function may become manifest. Changing levels of estrogen and progesterone the two female hormones produced in the ovaries, might lead to these symptoms. **(D.C.Dutta, 2006)**

Menopause is emerging as an issue owing to rapid globalization, urbanization, awareness and increased longevity in urban middle aged Indian women. Around 130 million Indian women are expected to live beyond the menopause into old age by 2015. **(Hobbs, 2003)**

World Menopause Day is celebrated on 18th October of every year. World Menopause Day started all the way back in 1984 and was instituted by the International Menopause Society and the World Health Organization. **(WHO, 1980)**

Menopausal women age between 45-59 years suffer from 46.9% menopausal symptoms. In that 5.7% of menopausal women experience hot flushes and 5.2% of menopausal women experience night sweats. Other than this 22.2% of menopausal woman experience dizziness, 15% experience palpitation, 17.3% experience irritability, 18% experience headache, 16.4% experience insomnia, 2.2% experience depression. **(WHO Research on Menopause, 2007)**

In India 96% of women suffer from menopausal problems. Among these 46.6% from Tamilnadu, 31.4% from Andra Pradesh, 21% from Bihar, 20.25% from Karnataka, 13% from Rajasthan, 11.6% from Kerala. **(Dr.Yoshiki, 2007)**

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. These effects are pronounced during menopause because of the drastic estrogen reduction. Phytoestrogens can potentially alleviate hypo-estrogen related deleterious effects. **(Somekawa, 2001)**

Seventy percentage of women are affected with menopausal problems, the symptoms of menopause usually last for the whole menopause to the rest of their lives. The most common symptoms are hot flushes, night sweats, irregular periods,

loss of libido, and vaginal dryness, anxiety, difficulty in concentrating, over reacting to minor upsets, quickly being irritated, forgetfulness and mood swings, insomnia or disturbed sleep may also be experienced.

The chance of incontinence increases with age and there is evidence that estrogen loss plays a role. **(WHO, 2008)**

Menopausal problems are treated by hormonal and non-hormonal therapies. The most commonly used hormone therapies are progesterones, estrogen, combined progesterone therapy. The non-hormonal treatments include nutritional, diet like soyabean, green leafs and supplementary calcium and vitamins. **(D.C.Dutta, 2006)**

The decrease in estrogen production that signals menopause can produce a variety of symptoms. These may include difficulty in regulating body temperature, which results in night sweats and hot flushes. Consuming soya isoflavones may reduce the frequency and intensity of hot flushes in menopausal woman. The improvements in menopausal symptoms are attributed to phytoestrogenic factors in soya beans. They found that there is a significant changes in the menstrual cycle of woman were fed a soya diet especially, their hormones levels were altered and the menstrual cycle was lengthened. **(Veeramani Rani Meyyammai, D.J, 2006).**

Need for the Study

Effective doses of individual soya isoflavones in menopause vary according to the type of which are soya foods chosen. Target range of 40-80mg of isoflavones per day is needed for adequate relief. Women with severe menopausal symptoms may see quicker results with daily intake. Women suffering from hot flushes and night sweats may have to use soya consistently in higher quantity to obtain good long term results. **(WHO, 2009)**

The quality of life and frequency of menopausal problems during menopausal period among 409 healthy women aged 40-59yrs. Menopausal rating scale and a questionnaire for assessing personal partner demographic data were used to collect the data. Descriptive statistics and logistic regression analysis was used to analyze the data. The foremost frequently found symptoms in the menopausal rating scale were hot flushes (68.9%) sleeping problems (68.4%) depressive mood (55.2%) and irritability (51.6%). **(Chedrans and Mignel, 2009)**

Soya phytoestrogens have high effect on vasomotor symptoms such as hot flushes, night sweats and vaginal dryness. Bowman Gray School of Medicine in North Carolina, conducted a comparative study regarding the effectiveness of soya phytoestrogens on women aged 45 to 56 with menopausal symptoms. They reported that women who took a phytoestrogen rich soya supplement reported a 50 percent decrease in the severity of their hot flushes. **(WHO Research on Menopause, 2009)**

The proportion of women living up to the menopause and beyond has increased over the centuries with the progressive increase in life expectancy. In the Elizabethan era i.e Queen Elizabeth II (1952) in England the average female life expectancy was approximately 40 years, with only 25 % of women living long enough to experience the menopause. During the 20^{th} century, however, with better nutrition and medical care, the expectation of life has rapidly increased and is now about 80 years for females in developed countries. At present in developed countries approximately 95% of females live to experience the menopause, and the average women now lives at least one third of her life after the menopause. In developed countries 30% or more of the total female population are postmenopausal women. The average age for menopause are 51.4 but 10% of women stop menstruation by age 40 and 5% do not stop until 60 years. **(Whitefield, 2006)**

Women are like the candle, as the candle melts down itself to shed light, the women also forget themselves and strive hand for the welfare of their family. The crucial period of their life is the postmenopausal period in which they experience a series of changes both physically and psychologically.

Nature is possessed with natural remedies. Soya beans a natural phytoestrogen are helpful in reducing the symptoms to a greater extent. The researcher had proved that soyabeans is a boon from the environment to treat the menopausal women. So the investigator felt the pressing need of treating the menopausal women with soyabeans to reduce their menopausal symptoms and to lead a comfortable life at the end of their reproductive period.

Statement of the Problem

A Study To Evaluate The Effectiveness Of Soyabeans On Menopausal Symptoms In Postmenopausal Women At Selected Rural Community Area, Salem.

Objectives

- To assess the menopausal symptoms in Post menopausal women.
- To evaluate the effectiveness of soyabeans on menopausal symptoms in Post menopausal women.
- To associate the menopausal symptoms in Post menopausal women with their selected demographic variables.

Operational Definitions

Effectiveness:

Statistical significant difference in menopausal symptoms before and after administration of soya beans in Postmenopausal women.

Soyabeans:

It is a legume like family of peas. Cleaned 50 grams of soyabeans should be soaked in water about 8-10 hours and boiled in water with salt to taste and administered to each post menopausal women for 3 weeks.

Menopausal symptoms:

It refers to the symptoms experienced by the post menopausal women which is measured through modified Greene Climacteric Scale developed by Berline Center for Epidemiology and Health Research.

Post menopausal women:

The women who had the permanent cessation of menstruation.

Assumptions

1. Menopausal symptoms differ from each women.
2. Soyabean contains all free of the macro nutrients required for good nutrition such as protein, carbohydrate, fat, vitamins and minerals including calcium, folic acid and iron which are used to alleviate the menopausal problems.
3. Soyabean has no side effect on women with menopausal symptoms.
4. Women those who are consuming soyabean will experience less menopausal symptoms.

Hypotheses

H_1: There will be a significant difference on menopausal symptoms before and after administration of soyabean in post menopausal women at $P<0.05$ level.

H_2: There will be a significant association between the menopausal symptoms among post menopausal women with their selected demographic variables at $P<0.05$ level.

Delimitations

The study will be limited to,

- Postmenopausal women age between 45 – 56 yrs
- who attained natural menopause

Projected Outcome

- The study will be able to assess the menopausal symptoms in post menopausal women.
- The study will provide an opportunity for Nurses to administer soyabeans to Postmenopausal women.
- At the end of the study post menopausal women will be able to consume soyabean to reduce the menopausal symptoms.

Conceptual framework

This study is based on Kenny's Open System model. All the living system are open, in this there is continuous exchange of matter, energy and information. Open system has changing degree of interaction with the environment from which the system receives input and gives back output in the form of matter, energy and information. For survival all systems of nursing receive ranging type and amount of matter energy and information.

The main concepts of open system model are input, throughput, output and feedback. In open system theory input refers to matter, energy and information that are processed. After processing the input the system returns to output (matter, energy and information to the environment in an altered state). Feed back refers to environment response to the systems output used by the system in adjustment correction and accommodation to the interaction with the environment.

The study is undertaken to determine the effect of soyabeans consumption on the menopausal symptoms.

Pretest was conducted to assess the physiological and psychological symptoms of post menopausal women.

Input : Provide soya beans for reducing postmenopausal symptoms.

Throughput : Throughput is the process of soya beans consumption on menopausal symptoms among post menopausal women who consumed soya beans.

Output : Reduction in menopausal symptoms.

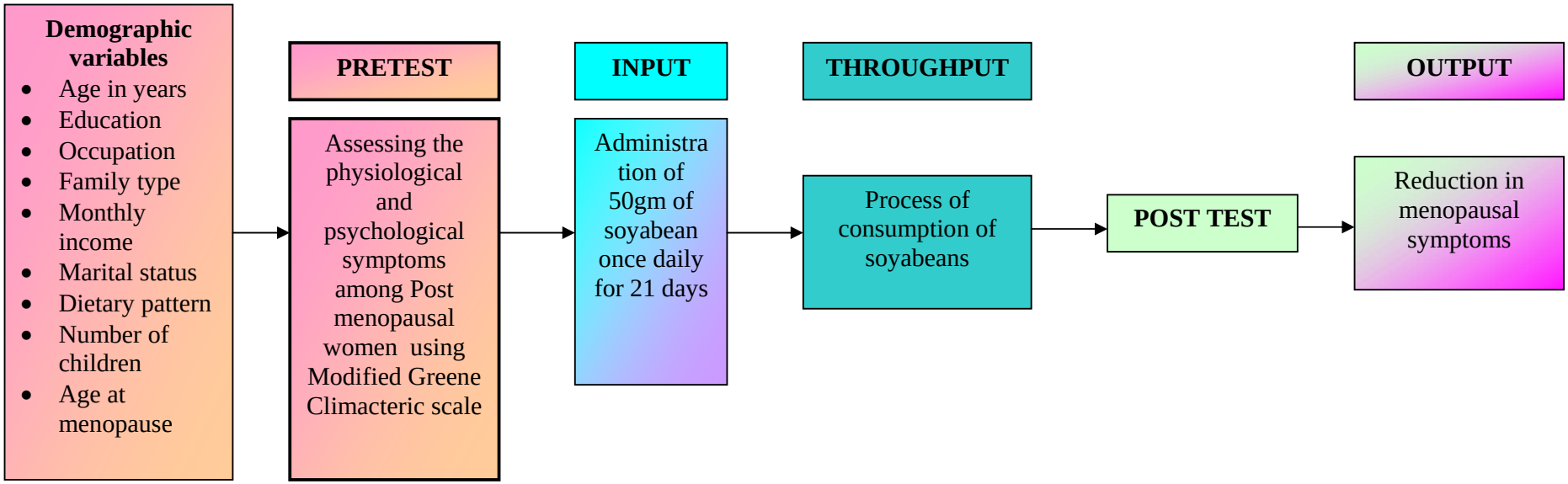

Figure -1.1: Conceptual Framework Based on J.W.Kenny's Open System Model, (1990)

Summary

This chapter dealt with introduction, need for the study, statement of the problem, objectives, operational definitions, assumptions, hypotheses, delimitations, projected outcome and conceptual framework.

CHAPTER – II

REVIEW OF LITERATURE

A review of literature is an eventual aspect of scientific study. It involves the systematic identification, location, serving and summary of the written material that contains information on a research problem. It broadens the views of the investigator regarding the problem under investigation, helps in focusing on the specially conserving the study.

It is essential step it can be done before and after selecting the problem. It can help to determine what is already known about the topic **(A.P.Jai, 2005)**.

For the present study the related literature was reviewed and organized in the following;

1. Literature related to menopause.
2. Literature related to soyabeans.
3. Literature related to menopausal symptoms.
4. Literature related to effectiveness of soya bean on menopausal symptoms.

1. Literature related to Menopause

Jayabharathi (2009) conducted a descriptive study to assess the knowledge and attitude on menopause among women attending gynaecological OPD at chrompet government hospital,Chennai.40 samples was selected through convenience sampling technique.structured questionnaire was used to assess the knowledge and rating scale was used to assess the attitude of menopausal women.the findings revealed that the maximum no of women18 (45%)women had inadequate knowledge,13(32.5%) women had moderate knowledge on menopause.Regarding their attitude maximum number of women 19(47.5%) had moderately favourable attitude,14(35%) women had favourable attitude and 7(17.5%) of them had unfavourable attitude towards

menopause.The study concluded that it is very important for the nurses to impact knowledge on symptoms and management of menopause to create awareness among women.

Yang. D, et.al., (2008) measured the prevalence of menopausal symptoms among 9939 Chinese women aged 40-52yrs in Guandong province in Southern China. The data were collected through interview schedule, they found that the mean age of natural menopause was 48.9yrs. There three most prevalent symptoms were insomnia (37.2%) joint and muscle pain (35.7%) and hot flushes were experienced by 17.5% of women. The factors associated with the frequency of menopausal symptoms included, profession , education, type of menopause and the presence of physical and emotional problems.

Manisha, and Girish, (2007) measured mental health status of 50 women with the age group 45-55 yrs during menopause and postmenopausal period among working as a teacher in recognized girls schools of Varanasi city, India. The subjects were divided in two groups during menopause and post menopausal period. An interview schedule, two general health questionnaires and a psycho social stress scale containing level of anxiety, depression, somatic symptoms and social dysfunction were used to collect the data. The results revealed that t=1.29 at P>0.05 for anxiety, t=1.93 at P>0.05, depression t=0.10 at P>0.05 social dysfunction, t=1.05 at P>0.05, somatic symptoms and t=1.15 at P>0.05 psychologic symptoms.

Whit Comb, et.al., (2007) conducted a study to measure the relationship between level of physical activity, frequency and severity of hot flushes among perimenopausal women at Baltimore, USA. 512 peri menopausal women were selected through random sampling technique. Questionnaires and self reported physical activity were used to collect the data. The data were analyzed using multiple

logistic regression. The study findings revealed that highly active women between the ages of 35 and 40 were significantly more likely to report moderate to severe hot flushes (OR = 1.70, P=0.01) and daily hot flushes (OR = 1.79, P<0.01) than minimally active women in unadjusted models.

Zervas, et.al., (2006)conducted a comparative study to assess the menopausal symptoms among working and nonworking menopausal women at Washington,USA.208 women were selected through random sampling aged 35-65yrs. The Menopausal Rating Scale was used to collect the data. The average age menopausal was found to be (48.7±2.3 years) (46 -51years). Average age at the menopause, the women were divided into peri (35-45 years), early menopause (46-51 years), post menopause (52 -65 years) groups. A significant higher percentage of perimenopausal women (36%) showed a psychological score = 7, while a higher percentage of postmenopausal women showed somatic score = 7 (>40%, P=0.001). The study concluded that the working women seem to suffer more from psychological symptoms whereas non working women showed a greater incidence of somatic symptoms. Educated women showed a lower incidence of psychological and somatic symptoms. Study indicates the age, level of education and working status in a group of women with same socio cultural background may also contribute to significant variations in menopausal symptoms.

Sarah P, et.al., (2006) conducted a retrospective study to evaluate the effectiveness of alternative therapies among post menopausal symptoms at department of family medicine outpatient clinic, Pune. The samples were 78 post menopausal women between 45-56yrs who discontinued hormonal therapy were selected randomly. The data was collected by using questionnaire method. The researcher concluded that, 40(68%) had reduction of postmenopausal symptoms after

alternative therapies. It is concluded that alternative therapy was very effective in reducing post menopausal symptoms.

Schnatz PF, et.al., (2005) conducted a pilot study on menopausal symptoms among post menopausal women at Farmington, USA.24 menopausal women were selected through random sampling technique. Questionnaire was used to collect the data. The study results reveals that hot flushes (63.8%) and night sweats (55.1%) occurred at a frequency similar to that reported in the literature, mood swings (77.9%) decrease in energy (75.9%), sleeping problems (73.4%) and memory problems (67.1%) were the four most common symptoms. Although were many symptoms that could impact negatively on their quality of life, 82.3% felt that it was wonderful to be alive during menopause, 73% were satisfied with their life, and the cumulative depression score did not fall into the depressed category.

2. Literature related soyabeans

HSU I.P, et.al, (2007) conducted a study to evaluate the effectiveness of soya germ extracts on blood lipo proteins, anti oxidative capacity and urinary estrogen metabolites in post menopausal women between 45-56 years as hormones therapy korea.60 samples were included in this study. Samples received 6g of soya germ extract per day for four weeks. It is inferred that plasma HDL/C level increased markedly with significant decrease of plasma LDL –C/ HDL-C ratio and LDL and (-2.03 mmol 95%, -3.20 to -0.85 mmol),After four weeks soya germ extract intervention result reveals that isoflavone significantly inhibits bone resumption and stimulates bone formation. So it is concluded that soya germ extract was effective in improving isoflavones levels.

Evelyne et.al, (2002) measured the effects of a standardized soya extracts on hot flushes among 75 menopausal women at southern China. The samples included who attained natural or surgical menopause and had seven hot flushes per day. They were randomized to receive during 4 months either soya isoflavone extract (total of 70 mg genistin and daidzin per day) or placebo. Result shows that 38% reduction in the mean number of hot flushes by week 4 and a 51% reduction by week 8. By the end of week 16, patients taking soya extract had a 61% reduction in their daily hot flushes whereas 21% reduction obtained with the placebo. The study findings revealed that hot flushes were reduced by at least 50% at the end of treatment period 65.8% in the soya extract group and 34.2% in the placebo group ($P<0.005$).The study concluded that soya extract was effective in reducing hot flushes among post menopausal women.

Lidia, et.al, (2001) conducted a prospective cohort study on legume consumption and risk of coronary heart disease in men and women may be associated with a reduced risk of coronary heart disease. Soyabeans protein and dietary fiber supplementation reduce serum cholesterol in randomized controlled trials. Consumption of legumes, which are high in bean protein and water-soluble fiber. A total of 9632 men and women who participated in the First National Health and Nutrition Examination Survey Epidemiologic Follow-up Study (NHEFS) and were free of cardiovascular disease (CVD) at their baseline examination were included in this prospective cohort study. frequency of legume intake was estimated using a 3 months food frequency questionnaire, and incidence of CHD and CVD was obtained from medical records and death certificates legume consumption was significantly and inversely associated with risk of CHD ($P=0.002$ for trend) and CVD ($P=0.02$ for trend) after adjustment for established CVD risk factors. legume consumption 4 times

or more per week compared with less than once a week was associated with a 22% lower risk of CHD (relative risk, 0.78; 95% confidence interval, 0.68-0.90) and an 11% lower risk of CVD (relative risk, 0.89; 95% confidence interval, 0.80-0.98).This study concluded that legume consumption is effective in reducing the risk of coronary heart diseases among men and women.

3. Literature related to Menopausal Symptoms

Melby, et.al., (2009) conducted a randomized double blind placebo control trial study on soyabean supplement for relieving menopausal symptoms. 134 Japanese women age between 40-59 years. Samples were randomly assigned to three groups. Mood states questionnaire was used to collect the data for 12 weeks. Placebo (n=4) 10mg of equal per / day (Eq: 1 n = 44) and 10mg of equal three times per day (Eq: 3 n=46). Habitual isoflavones intake was limited to 20mg/dl. The study concluded that soyabean supplement improved mood related symptoms in peri menopausal and postmenopausal women and there was significant difference observed in the areas of psychological ($p<0.05$), and physical ($p<0.01$) well-being. This study concluded that soya supplement is effective for reducing menopausal symptoms.

Kupfever EM, et.al. (2009) conducted a study on complementary and alternative medicine for vasomotor symptoms among women, who have discontinued hormone therapy. A sample of 563 menopausal women between 45-56 years who had discontinued the use of hormone therapy completed a questionnaire describing their experiences with the use of complementary and alternative medicine. The most common choice of complementary and alternative medicine was (a) multi vitamin and calcium, (b) soya supplement food, (c) homeopathy (d) meditation and relaxation. They find out the increasing adoption of complementary and alternative medicine is reducing menopausal symptoms among postmenopausal women.

Kavandith K, et.al., (2008) conducted a study on high Isoflavones soya diet increases insulin secretion with out decreasing insulin sensitivity in pre menopausal non human primates. They studied insulin sensitivity in 15 premenopausal non human primates consuming either high Isoflavones soya diet for 4 months. The study result demonstrates that consumption of soya containing high isofiavones level is not associated with changes in insulin sensitivity in the high estrogen mimic of the premenopausal female.

Thurston, et.al., (2008) conducted a study to measure the effect of vasomotor symptoms among menopausal women at selected hospital Mexico. 1042 women aged 42-52 were selected through randomization. Ordinal logistic regression model was used to analyze the menopausal symptoms like hot flushes, night sweats, and negative effect and sleep problems during menopause. The results reveals that the negative effect (1.27, 95% CI 1.08-1.51), sleep problems (1.38, 95% CI 04-1.85), hot flushes (1.14, 95% CI 1.06-1.24) in young age and night sweats (1.84, 95% CI 1.33-2.55). They concluded that vasomotor symptoms very high among menopausal women.

Nahar CA, et. al., (2007) conducted a double blind placebo controlled randomized study on efficiency and safety of a soya isoflavones extract in post menopausal women at China. The total sample size was 80 they were between the age group of 45-56 years (mean age 55.1 year) who reported 5 or more hot flushes episode per day were randomized to receive either 250 mg of standardized soya extract or a total of 100 mg/ day of isoflavones (n=40) or placebo (m=40). The mean number of hot flushes was 9.6 ±1 – 3.9 per day in the isoflavones group and 10.1 ± 1 – 4.9 in the placebo group (P= 70.05). After 10 months there was a significant reduction in both groups. The findings revealed that soya isoflavines extract is effective alternative therapeutic for post menopausal women between 45-56 years.

Azadbaknt I, et.al., (2007) conducted a study in department of school of nutrition and food science Tehran, on soya including diet improving the features of the metabolic syndrome. This randomized crossover clinical trial was undertaken among 42 post menopausal women between 45 - 56 years with the metabolic syndrome. Samples randomly assigned two groups. First group was assigned to consume soya protein diet and other group with control diet for period of 8 weeks. After 8 weeks fasting plasma glucose level and low density lipid cholesterol levels were evaluated. It was found the soy protein regimen decrease the homeostatus model of assessment-insulin resistance score. Significantly when compared to the control diet as evidenced by the difference in percentage has -7.4±0.8, P<0.01 and -12.9±0.9 P<0.01) respectively. It was also found that the soy protein regimen reduced fasting plasma glucose than the control diet (-5.3±0.5%, P<0.01) and also the LDL cholesterol level (-5.0±0.6% P<0.01). Hence the study was concluded that soya protein consumption improved glycemic control and lipid profiles in postmenopausal women with the metabolic syndrome.

File SE, et.al., (2005) conducted a double study on cognitive domain improvement of soya supplements among postmenopausal women at Pune. 50 postmenopausal women (aged 51-66 years) were randomly allocated to receive daily treatment with a soya supplement (60 mg total isoflavone equivalents/day) or matching placebo capsules. They were tested at baseline before treatment began and after 6 weeks of treatment in tests of attention, memory, and frontal lobe function, and completed questionnaires to assess sleepiness, mood, and menopausal symptoms. After 6 weeks of treatment, there was a significant difference (P < 0.02) in - somatic menopausal symptoms in the group taking soya supplements. On the test of non verbal short term memory, the soya group showed greater improvement than the

placebo group (P<0.03), but there were no effects of soya on long term memory. The soya treatment produced significantly better performance on the two tests of frontal lobe function, P<0.05, complex rule reversal P<0.03, and planning ability (P<0.05). This study concluded that soyabean was effective in improving the cognitive function.

West SC, et.al., (2005) effect of concluding soya protein in blood cholesterol – lowering diet among postmenopausal women in India. They were between the age group of 45-60 years. They have used modified menopausal rating scale to assess the menopausal symptoms samples are majority of women had severe menopausal symptoms before administration of soyabean. After the administration of soyabeans for postmenopausal women upto two months, they were assessed the menopausal symptoms with the same scale. Majority of samples had moderate menopausal symptoms. So it reveals that soyabean is effective reducing menopausal symptoms among postmenopausal women.

4. Literature related to Effectiveness of Soyabean on Menopausal Symptoms

Kim HW, et.al, (2007) conducted a study at Korea among 245 women to measure the relationship between isoflavones intake from soya food in peri menopausal women. They were three groups divided based on isoflavones intake (ie) small intake, moderate intake and large intake. The data were analysed through questionnaire method. There were positive health effects among the group which had moderate and large intake of isoflavones.

Cohen LA, et.al., (2007) conducted a study on soya isoflavones intake among Postmenopausal women. It was measured in 36 healthy premenstrual women before and after the injection of soya protein formula containing 120mg of isoflavones daily for one month. The data was analysed through menopausal rating scale. The result was soya isoflavones injections include qualitative differences in urinary excretion of

estrogen metabolites and isoflavones. They find out that isoflavones rich soya protein administration is effective among postmenopausal women.

Ho SC, et.al., (2003) Soya protein consumption and bone mass in early postmenopausal Chinese women. The sample comprised 454 healthy Chinese women within the first 12 years of postmenopause. They estimated the dietary intake (55.1±1.357) of soya protein and isoflavones, and other key nutrients, including dietary protein and calcium, using the quantitative food frequency method. Noted a dose-response relationship with increasing higher BMD values at the trochanter, intertrochanter as well as the total hip and total body with increasing soya protein intake quartiles ($P<0.05$). The BMD values differed by about 4-8% between the first and fourth soya protein intake quartiles. Though women from the fourth intake quartile had a 2.9% higher BMD value compared with those from the first intake quartile, the difference was not statistically significant. The study reveals that soya protein and soya isoflavones on, bone health should be further explored in populations with habitual dietary soya intake.

Ranich, et.al., (2001) Conducted a study on Protective effects of dietary phytoestrogens in chronic renal disease Phyto-estrogens are naturally occurring plant compounds that are present primarily in soya beans as isoflavones and in flaxseed as lignans. Because of their structural similarity to endogenous estrogens, phytoestrogens bind to both estrogen receptors (ER)-alpha and beta (but more strongly to ER-beta) and exert estrogen-like effects. There is increasing evidence that dietary phytoestrogens have a beneficial role in chronic renal disease.

Summary

This chapter dealt with the literature related to menopause, menopausal symptoms and effectiveness of soya bean on menopausal symptoms

CHAPTER – III

METHODOLOGY

The methodology of research indicates the general pattern of organizing, the procedure for gathering valid and reliable data for the problem under investigation. **(Polit and Hungler, 2003)**

This chapter describes the research design, setting, variables, population and sample, sampling technique and sample size, criteria for sample collection, description of the tool, validity and reliability, data collection procedure, pilot study and data analysis.

Research Approach:

Quantitative evaluative approach was adopted for this study.

Research Design

The research design adopted for this study pre-experimental research design (one group pre test post test design).

O_1	X	O_2

E : Experimental group

O_1 : Pre test (Assessing the Level of menopausal symptoms before intervention)

X : Intervention (Administration of soyabeans)

O_2 : Post test (Level of menopausal symptoms after intervention)

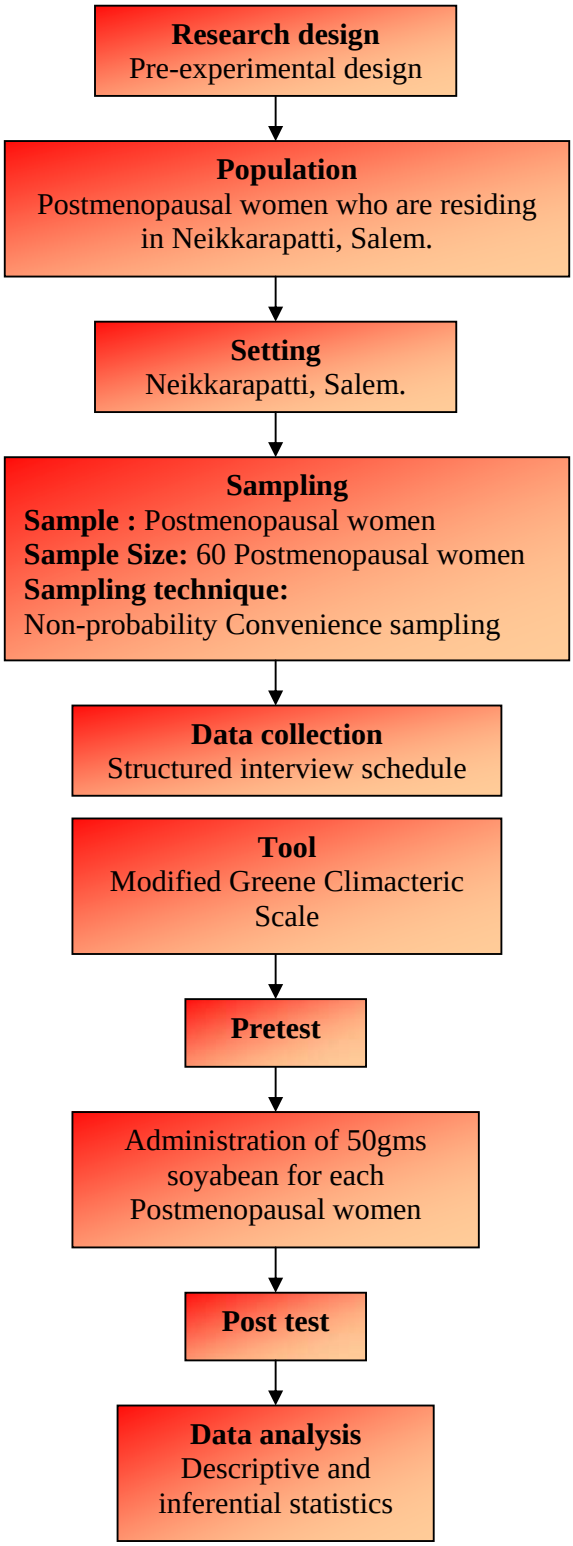

Figure -3.1: Schematic Representation of Research Methodology

Population

Population under this study includes all post menopausal women, those who are residing at Neikkarapatti, Salem.

Description of setting

The study was conducted at Neikkarapatti, Salem. It is one kilometer away from our college. The selection for this area was on the basis of,

1. Geographical proximity
2. Availability of samples
3. Economy of money access
4. Feasibility in terms of cooperation extended by the Panchayat President in Neikkarapatti, Salem.

Sample:

Post menopausal women with menopausal symptoms

Sample size:

The sample size was 60 post menopausal women.

Sampling technique:

Non probability convenience sampling technique was used in this study.

Criteria for sample selection

Inclusion criteria

Post menopausal women who,

- are willing to participate
- have age above 45-56 years
- have attained natural menopause

Exclusion criteria

Post menopausal women who,

- have any medical illness
- are not available during data collection period.
- are in hormone replacement therapy

Variables

Independent variable: Soyabeans

Dependent variable: Post menopausal symptoms

Extraneous variable: The postmenopausal women who are consuming soyabean daily.

Description of Tool:

The tool for collection of data for this study consists of two sections,

Section-A deals with demographic characteristics such as age, education, occupation, type of family, monthly family income, marital status, dietary pattern, number of children, duration of menopause.

Section –B consists of Modified Greene Climacteric Scale by Berline Center for Epidemiology and Health Research. This tool is used to evaluate the effectiveness of soyabeans on selected menopausal symptoms of post menopausal women.

Scoring

Scoring was given according to the menopausal symptoms. It is classified as physiological and psychological symptoms.

Score will be 1= Not at all, 2=Rarely, 3= Sometimes, 4= Frequently, 5 = Always.

Table – 3.1: Scoring Procedure

Score	Postmenopausal symptoms
1 – 31	Mild
32 – 62	Moderate
63 – 95	Severe

Validity and Reliability of the Tool

Validity:

Validity refers to degree to which an instrument measures what is supposed to be measured.

Validity of the tool and content was established by consultation with Guide and Experts. The tool was validated by one Medical Expert in the field of Obstetrical and Gynaecology, one Dietician, 4 Nursing Experts, one Statistician and two Language Experts. The tools were found adequate and minor suggestions given by the Experts were incorporated.

Reliability:

Reliability of an instrument is the degree of consistency measures that attribute it is supposed to be measured**. (Polit and Hungler 1998)**

Reliability of the tool was established by test retest method. The correlation coefficient was found to be r = 0.87. Hence the tool was found reliable and considered for proceeding.

Pilot Study

Pilot study was conducted from 27.06.11 to 02.07.11 among postmenopausal women with menopausal symptoms in Poolavari, Salem to assess the feasibility and practicability of the study.

The finalized tool was administered. It was found feasible for post menopausal women. They can easily follow the instruction and cooperated. It also helped the investigator to select suitable statistical methods.

Method of Data Collection

Prior to collection of data written permission was obtained from the Panchayat President of Neikkarapatti, Salem.

Ethical consideration:

Informed consent was obtained from the post menopausal women, those who are willing to participate in this study.

Data Collection Procedure

Data collection was done for a period of one month from 13.07.11 to 07.08.11 at Neikkarapatti village, Salem. Permission was obtained from the Panchayat President. The investigator explained the procedure to the post menopausal women and oral consent was obtained from the samples. The pre-test was conducted by using Modified Greene Climacteric Scale by Berline Center for Epidemiology and Health Research before administration of soyabeans. The investigator soaked 1kg and 50gms of soyabeans overnight and in the morning, the investigator boiled the soyabean in water with salt to taste in the house of a sample. Then investigator gathered the samples in a particular area and provided 50gms of boiled soyabean, once daily for 21 days for 60 women. At the 22^{nd} day of intervention posttest was conducted using same scale.

Planned Data Analysis

The data was collected, arranged and tabulated. Mean, SD, mean percentage, and paired ‘t’ value were used to find the effectiveness of soyabeans among

postmenopausal women. Chi-square test was used to associate the postmenopausal symptoms with their selected demographic variables.

Summary

This chapter dealt with the methodology which consists of research design, the description of setting, sample and sampling technique, sample size, characteristics of the sample, selection and development of study instrument, validity and reliability, pilot study, method of data collection and plan for data analysis. The analysis and interpretation of the study are presented in the following chapter.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of data collected to evaluate the effectiveness of soya beans on menopausal symptoms among postmenopausal women. The purpose of the analysis is to reduce the data to manageable and interpretable form, so that the research problem can be suited and tested.

The collected data was tabulated, organized and analysed by using descriptive and inferential statistics as follows,

Section-A:

Distribution of postmenopausal women according to their demographic variables.

Section-B:

Distribution of postmenopausal women according to their level of menopausal symptoms in pretest.

Section-C:

a) Comparison of pre and post test level of menopausal symptoms among post menopausal women.
b) Area wise mean, SD and mean percentage on level of menopausal symptoms among postmenopausal women.

Section-D:

Hypothesis testing

a) Effectiveness of soyabeans on level of menopausal symptoms among post menopausal women.
b) Association on pretest level of menopausal symptoms among postmenopausal women with their selected demographic variables.

Section – A

Distribution of postmenopausal women according to their demographic variables

Table-4.1:

Frequency and percentage distribution of postmenopausal women according to their demographic variables

n=60

S. No	Demographic variables	Frequency (f)	Percentage (%)
1.	**Age in years**		
	a. 45 – 48	13	22
	b. 49 – 52	21	35
	c. 53 – 56	26	43
2.	**Education**		
	a. Illiterate	42	70
	b. Primary education	17	28
	c. Secondary education	1	2
3.	**Occupation**		
	a. House wife	40	67
	b. Coolie	17	28
	c. Private employee	1	2
	e. Government employee	2	3
4.	**Family type**		
	a. Nuclear family	27	45
	b. Joint family	29	48
	c. Extended family	4	7
5.	**Monthly family income in rupees**		
	a. Less than Rs.5000	56	93
	b. Rs.5000 – 10000	4	7
6.	**Marital status**		
	a. Married	60	100
7.	**Dietary pattern**		
	a. Vegetarian	7	12
	b. Non vegetarian	53	88
8	**Number of children**		
	b. 1	7	12
	c. 2 – 3	31	52
	d. 4 – 5	17	28
	e. above 5	5	8
9.	**Duration of menopause**		
	a. 1 year	6	10
	b. 2 years	14	23
	c. 3 years	13	22
	d. More than 3 years	27	45

The above table shows that 26(43%) postmenopausal women are between the age group of 53-56yrs and most of the postmenopausal women 42(70%) are illiterate, 40(67%) postmenopausal women are housewives and 29(48%) are from joint family and majority of the postmenopausal women 56(93%) monthly income is less than Rs.5000, all of the postmenopausal women 60(100%) married, 53(88%) of them non vegetarian, 31(52%) of the postmenopausal women are having 2-3 children and 27(45%) of the postmenopausal women's duration of menopause is more than 3 yrs.

Section- B

Distribution of postmenopausal women according to their level of menopausal symptoms in pretest.

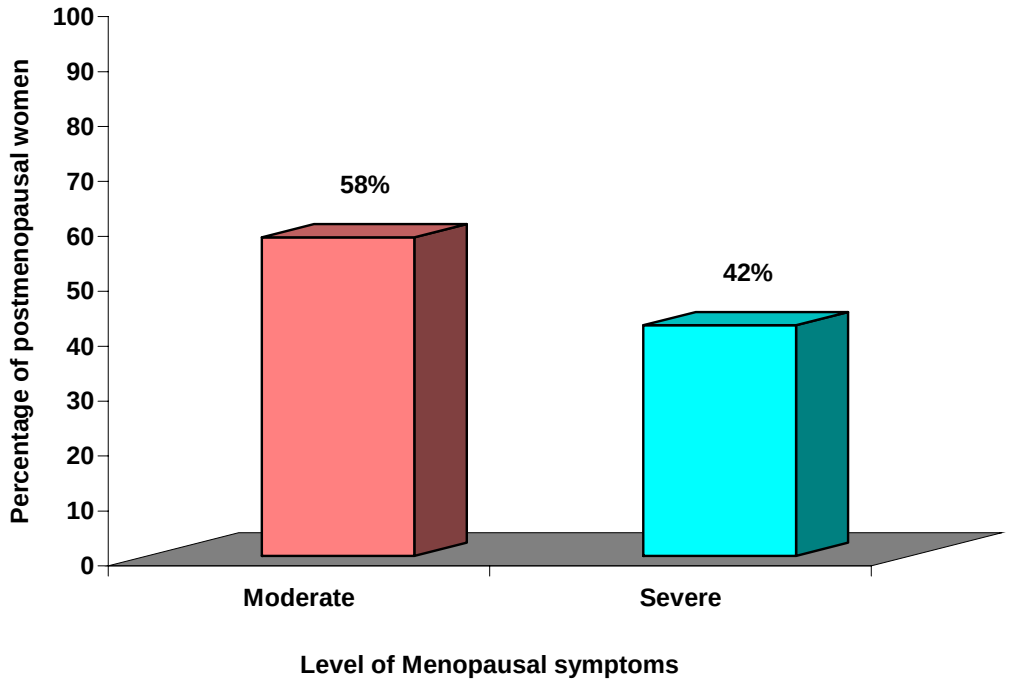

Figure-4.1: Percentage distribution pretest level of menopausal symptoms among post menopausal women.

The above figure shows that, in pre test 35(58%) postmenopausal women had moderate symptoms and 25(42%) had severe symptoms.

Section - C

Comparison of pre and post test level of menopausal symptoms among postmenopausal women.

n=60

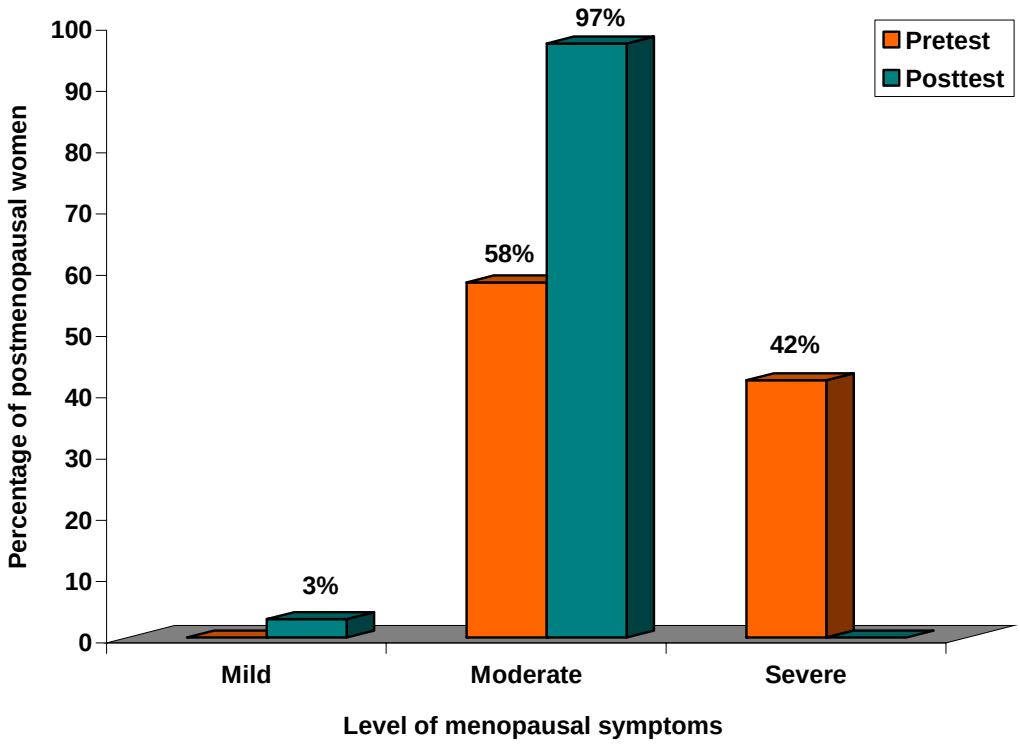

Figure-4.2: Percentage distribution of level of menopausal symptoms among post menopausal women.

The above figure shows that, in pretest 35(58%) postmenopausal women had moderate symptoms and 25(42%) had severe symptoms whereas during post test majority 58(97%) had moderate symptoms and only 2(3%) had mild symptoms none of them have severe menopausal symptoms.

Table – 4.2:

Area wise Mean, SD and mean percentage on Level of menopausal symptoms among postmenopausal women.

n=60

Area	Maximum score	Pretest			Post test			Difference in mean score
		Mean	SD	Mean %	Mean	SD	Mean %	
Physiological symptoms	55	33.55	6.83	61	24.73	5.94	44	8.82
Psychological symptoms	40	23.58	6.29	58	17.62	3.38	44	5.96
Overall	**95**	**57.13**	**9.39**	**60**	**42.35**	**7.27**	**44**	**14.78**

The above table shows that in pretest the higher mean score (33.55±6.83) which was 61% for the area of physiological symptoms and lower mean score (23.58±6.29) was for the area of psychological symptoms which was 58% whereas during post test, the mean score (24.73±5.94) for physiological symptoms which was 44% and lower mean score (17.62±3.38) for psychological symptoms which was 44%.

The overall mean score (57.13±9.39) which was 60% in pre test and (42.35±7.27), whereas 44% in post test and also the difference in mean score was 14.78, the post test mean score is less than the pre test score. It reveals that menopausal symptoms are reduced in post test score than pre test score.

Section - D

Hypotheses testing

Effectiveness of soyabean on level of menopausal symptoms among post menopausal women

Table – 4.3:

Area wise mean, SD and 't' value on level of menopausal symptoms among postmenopausal women.

n=60

Area	Pre test		Post test		df	't' test
	Mean	SD	Mean	SD		
Physiological symptoms	33.55	6.83	24.73	5.94	59	22.62*
Psychological symptoms	23.58	6.29	17.62	3.38	59	25.65*
Overall	**57.13**	**9.39**	**42.35**	**7.27**	**59**	**29.22***

***significant at P<0.05 level, table value – 1.96**

The above table shows that the calculated 't' test value for physiological symptoms is 22.62 and psychological symptoms 25.65 also overall 't' test value is 29.22 which is significant at P<0.05 level. Hence H_1 is accepted. It can be concluded that soyabean is effective in reducing the menopausal symptoms among postmenopausal women.

Association on pretest level of menopausal symptoms among postmenopausal women with their selected demographic variables.

Table -4.4:

Chi-square test on level of menopausal symptoms among postmenopausal women with their selected demographic variables.

n=60

S. No	Demographic variables	Pretest		df	Table value	χ^2
		Moderate	Severe			
1.	**Age in years**			2	5.99	2.38
	a. 45 – 48	10	3			
	b. 49 – 52	11	10			
	c. 53 – 56	14	12			
2.	**Education**			2	5.99	4.22
	a. Illiterate	21	21			
	b. Primary education	13	4			
	c. Secondary education	1	-			
3.	**Occupation**			3	7.81	7.44
	a. House wife	28	12			
	b. Coolie	6	11			
	c. private employee	-	1			
	e. Government employee	1	1			
4.	**Family type**			2	5.99	10.99*
	a. Nuclear family	21	6			
	b. Joint family	14	15			
	c. Extended family	-	4			
5.	**Monthly family income in rupees**			1	3.84	1.94
	a. Less than Rs.5000	34	22			
	b. Rs.5000 – 10000	1	3			
6.	**Marital status**			-	-	-
	a. Married	35	25			
7.	**Dietary pattern**			1	3.84	0.79
	a. Vegetarian	3	4			
	b. Non vegetarian	32	21			
8	**Number of children**			3	7.81	2.53
	a. No children					
	b. 1	6	1			
	c. 2 – 3	17	14			
	d. 4 – 5	9	8			
	e. above 5	3	2			
9.	**Duration of menopause**			3	7.81	0.56
	a. 1 year	4	2			
	b. 2 years	9	5			
	c. 3 years	7	6			
	d. More than 3 years	15	12			

Significant at P< 0.05

The above table shows that there is a significant association between the level of postmenopausal symptoms among postmenopausal women with their type of family. Hence H_2 is retained only for family type and H_2 was rejected for rest of the demographic variables.

Summary

This chapter the researcher discussed about distribution of menopausal women according to their demographic variables, level of menopausal symptoms and mean and standard deviation, effectiveness of soya beans on menopausal symptoms and association with their selected demographic variables.

CHAPTER – V

DISCUSSION

Description of demographic variables

The researcher found that distribution of post menopausal women according to their age shows 26(43%) of them belongs to the age group of 53-56 years.

This study was supported by **Ms.Manubaikam, (2007)** conducted the study to assess the menopausal symptoms among postmenopausal women she found that 16(53.3%) belongs to the age group of 53-56 years.

Distribution of post menopausal women according to their marital status 60(100%) of them were married. This study was supported by **Ms.Manubaikam, (2007)** conducted a study to assess the menopausal symptoms among postmenopausal women. She found that 80% of menopausal women were married.

The first objective of the study was to assess the menopausal symptoms in post menopausal women before and after soyabean supplement.

During pretest 35(58%) of postmenopausal women had moderate symptoms and 25(42%) had severe symptoms where as during posttest, majority 58(97%) had moderate symptoms and only 2(3%) had mild symptoms, none of them have severe menopausal symptoms.

The present study was supported by **Ms.Rukmani, (2010)** in her study majority of postmenopausal women (60%) had moderate symptoms, (40%) of women had severe symptoms during pretest, whereas in posttest all menopausal women (100%) had moderate symptoms and no one had severe symptoms.

The second objective of the study was to evaluate the effectiveness of soyabeans on menopausal symptoms in postmenopausal women

The 't' test value for physiological symptoms was 22.62 and psychological symptoms 25.65 and overall 't' test value is 29.22, which was significant at $P<0.05$ level.

This study was supported by **Ms.Manubaikam, (2007)** who conducted study in Coimbatore to evaluate the effectiveness of soyabeans consumption on menopausal symptoms among women between 45-56 years in experimental group. It revealed that posttest mean value 11.5 was lesser than pre test mean value 14.5 in experimental group. The obtained 't' test value 7.761 was highly significant at 0.05 level.

The above study findings reveals that soyabeans is effective in reducing menopausal symptoms among postmenopausal women.

The third objective of the study was to associate the menopausal symptoms among postmenopausal women with their selected demographic variables.

There is a significant association between the level of menopausal symptoms among postmenopausal women with the type of family. Hence H_2 was retained only for the variable family type and H2 was rejected for the rest of the demographic variables.

The present study was opposed by **Mrs.Manubaikm, (2007)** in which there is no association found between menopausal symptoms and their selected demographic variable such as age, religion, education, occupation, family type, income, marital status and dietary pattern.

The above study findings reveals that soyabeans is effective in reducing menopausal symptoms among postmenopausal women.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICAITONS AND RECOMMENDATIONS

Summary

The purpose of this study was to evaluate the effectiveness of soyabeans on menopausal symptoms in post menopausal women at selected rural community area, Salem. Pre-experimental design was chosen for this study. The conceptual framework selected was based on Kenney's Open System Model. The sample size is 60 and the samples were selected by simple random sampling, structured interview schedule was used to collected the data.

Major Findings are summarized as follows,

- Majority 26(43%) of post menopausal women belongs to the age group of 53-56 years.
- Majority 42(70%) of post menopausal women were illiterate.
- Majority 40(67%) of post menopausal women were housewives and 29(48%) were from joint family.
- All most 56(93%) of post menopausal women monthly income was less than Rs.5000.
- All of them 60(100%) of the post menopausal women were married.
- Majority 53(88%) of them non vegetarian.
- 31(52%) of the post menopausal women were having two children and 27(45%) of the post menopausal women duration of menopause was more than 3 years.

Conclusion:

This study was conducted to evaluate the effectiveness of soyabeans on menopausal symptoms in post menopausal women at selected rural community. The finding reveals that soyabean is effective in reducing physiological and psychological symptoms among postmenopausal women.

Implications

Nursing Service:

- Nursing personnel working in hospital can reinforce the Health benefits of soyabeans.
- This method can be used in various settings.
- Soyabean supplement can be used to reduce the menopausal symptoms.

Nursing Education:

- Nurse educator must update the knowledge about menopausal and other alternative therapies.
- Faculty members have to motivate the student in group discussion regarding menopause and importance of soyabeans.
- Nurse educator need to prepare the nursing students to obtain the skill in education the women about the importance of soyabeans menopausal symptom.
- This study may be issued for further references.

Nursing Practice:

- Nurse can provide health education regarding soyabeans in community and hospital.
- Nurse can explain about the nutritive value of soyabeans.

Nursing Administration:

- Nurse administrator should plan to conduct some food exhibitions.
- Nurse administrator can encourage the staff nurse, student nurse and post menopausal women to involve in research activities of menopausal related problem.
- Periodic seminar, discussion, workshop and conference has to be conducted for the staff nurse and other medical personals.

Recommendations

The study drawn the following recommendations,

- A similar study can be done with other type of soya products such as soya powder.
- A similar study can be done with comparison of other alternative method.
- A similar study can be conducted with large samples.
- A similar study can be conducted longer period of time.

Summary

This chapter dealt with summary, conclusion, implication, limitation and recommendations.

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ANNEXURE – A

LETTER SEEKING PERMISSION TO CONDUCT RESEARCH STUDY

From

Ms. Manimegalai. A.P,
II Year M.Sc., (N)
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To

The Principal,
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

Respected Sir/Madam,

Sub: Permission to conduct research project - request- reg.

I, **Ms. Manimegalai. A.P,** II Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, is to conduct a research project which is to be submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfilment for the award of M.Sc. (Nursing) Degree.

Topic: "A Study To Evaluate The Effectiveness Of Soyabeans On Menopausal Symptoms In Postmenopausal Women At Selected Rural Community Area, Salem".

I request you to kindly do the needful.

Thanking you.

Date : 13.07.2011 Yours sincerely,
Place : Salem

(Ms.Manimegalai. A.P)

ANNEXURE – B

LETTER GRANTING PERMISSION TO CONDUCT RESEARCH STUDY

From

A.P.Manimegalai,

M.Sc Nursing Final year,

Sri Gokulam College of Nursing

Salem

To

The Principal,

Sri Gokulam College of Nursing,

Salem.

Respected madam,

Sub: Permission to conduct research project –Request-Reg.

I **Ms. A.P.Manimegalai,** a Final year M.Sc Nursing student of Sri Gokulam of Nursing is conducting a research project which is to be submitted to the Tamil Nadu Dr. M.G.R Medical University, Chennai in partial fulfilment of University Requirement for the award of M.Sc (Nursing) Degree.

Topic: A Study to Evaluate the Effectiveness of Soyabeans on Menopausal Symptoms in Post Menopausal Women at Selected Rural Community Area, Salem.

I am conducting the project at Neikkarapatti, Salem From 13.07.11 to 07.08.11.

kindly do the needful.

Thanking you,

Yours Faithfully,

Date:12.07.11

Place: Salem

(A.P.Manimegalai)

LETTER GRANTING PERMISSION TO CONDUCT RESEARCH STUDY

SRI GOKULAM COLLEGE OF NURSING
3/836, Periyakalam, Neikkarapatti, Salem - 636 010.
Phone : 0427 - 6544558,2272240,2272250 Fax : 0427 - 2270200, 2447077
Email : sgcon2001@yahoo.com, sgcon2001@gmail.com

Date : 11/7/11

LETTER REQUESTING PERMISSION TO CONDUCT A RESEARCH PROJECT

From

Ms.A.P.Manimegalai,
II Year M.SC(N),
Sri Gokulam College Of Nursing,
Salem,Tamilnadu.

To

The Panchayat President,
Neikarapatti,
Salem.

Through

The Principal,
Sri Gokulam College Of Nursing,
Salem,Tamilnadu.

Respected Sir/Madam

Sub: Permission to conduct research project-request-reg.

I, Ms. **A.P.Manimegalai,** II Year M.SC (Nsg) student of Sri Gokulam College Of Nursing, is to conduct a research project which is to be submitted to the Tamil Nadu Dr. M.G.R Medical University, Chennai in partial fulfillment for the award of M.Sc,(Nsg) Degree.

Topic: "A Study to Evaluate the Effectiveness of Soybeans On Menopausal Symptoms in Post Menopausal women at Selected Rural Community Area, Salem."

Kindly permit to conduct a.research project in Neikarapatti, Salem from 11.7.2011 to 07.08.2011 with adherence to the community policies and regulations.

Thanking you,

Yours Obediently,

தலைவர்
முதல் நிலை ஊராட்சி
நெய்க்காரப்பட்டி,
சேலம்-10.

(A.P.MANIMEGALAI)

Place: Salem
Date : 11/7/11

PRINCIPAL
Sri Gokulam College of Nursing
SALEM - 636 010.

ANNEXURE – C

LETTER REQUESTING OPINION AND SUGGESTIONS OF EXPERTS FOR CONTENT VALIDITY OF THE RESEARCH TOOL

From

Miss. A.P.MANIMEGALAI
Final Year M.Sc., (N),
Dept. Obstetrics and Gyanecological Nursing,
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To,

(Through proper channel)

Respected Madam,

Sub: Requesting the opinion and suggestions of Experts for establishing content validity of the tools.

I, **Miss. A.P.MANIMEGALAI** a Final Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, have selected the statement of the problem mentioned below for the research study to be submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai as partial fulfilment for the award of Master Of Science in Nursing.

Topic: "A Study To Evaluate The Effectiveness Of Soyabeans On Menopausal Symptoms In Post Menopausal Women At Selected Rural Community Area, Salem".

I request you to kindly validate the tool developed for the study and give your expert opinions and suggestions for necessary modifications.

Thanking you

Yours Sincerely,

Place : Salem

Date :

(Miss.A.P.Manimegalai)

Enclosed:

1. Certificate of validation
2. Tool for collection of data
3. Criteria checklist for evaluation of tool and content.

ANNEXURE - D

TOOL

SECTION – A: DEMOGRAPHIC VARIABLES

Introduction to participants:

Dear participants,

This section consists of the personal information and you are requested to answer the question correctly. The information collected from you will be kept confidential.

Sample No ☐

1. Age in years

a) 45 – 48 ( )

b) 49 – 52 ( )

c) 53 – 56 ( )

2. Education

a) Illiterate ( )

b) Primary education ( )

c) Secondary education ( )

d) Higher secondary ( )

e) Graduate ( )

3. Occupation

a) House wife ( )

b) Coolie ( )

c) Private employee ( )

d) Government employee ( )

4. Family type

a) Nuclear family ( )

b) Joint family ( )

c) Extended family ( )

5. Monthly family income in rupees (`)

a) Less than ` 5000 ( )

b) `5000 – ` 10000 ( )

c) More than ` 10000 ( )

6. Martial Status

a) Married ( )

b) Unmarried ( )

7. Dietary pattern

a) Vegetarian ( )

b) Non-Vegetarian ( )

8. Number of children?

a) 1 ( )

b) 2 – 3 ( )

c) 3 – 4 ( )

c) Above 4 ( )

d) No children ( )

9. When did you attain menopause?

a) Before 1 year ( )

b) Before 2 years ( )

c) Before 3 years ( )

d) More than 3 years ( )

SECTION – B

MODIFIED GREENE CLIMACTERIC SCALE

Description of Tool

Section-B consists of Modified Greene Climacteric Scale. This tool is used to evaluate the effectiveness of soyabeans on selected menopausal symptoms of post menopausal women in selected community area, Salem.

Instruction:

The instructor will conduct a structured interview by using 5 point scale. The responses given by the samples will be marked as (✓) and given score accordingly.

S. No	Symptoms	Not at all	Rarely	Some times	Freq uently	Always	Score
I	**PHYSIOLOGICAL SYMPTOMS**						
1	How often do you feel that your heart is beating quickly or strongly?						
2	How often do you have sleep disturbances during night time?						
3	How often do you get the feeling of tiredness?						
4	How often do you feel dizziness?						
5	How often do you feel tightness in head or body?						

6	How often do you feel tingling sensation in your body?						
7	How often do you have joint and muscle pain?						
8	How often you experienced loss of feeling in the hands or feet?						
9	How often do you get breathing difficulties?						
10	How often do you have hot flushing sensation during the day or night?						
11	How often do you getting excessive sweating during night time?						
II	**PSYCHOLOGICAL SYMPTOMS**						
1	How often do you feel tensed up for little thing?						
2	How often do you feel excitability suddenly?						
3	How often do you have difficulty in concentrating your work?						

4	How often do you lose interest in doing things?						
5	How often do you feel unhappy?						
6	How often do you feel cry suddenly?						
7	How often do you feel irritable suddenly?						
8	How often do you have headache?						

Scoring system

1 - Not at all

2 - Rarely

3 - Sometimes

4 - Frequently

5 - Always

பிரிவு - அ

தனிநபர் பற்றிய விபரங்கள்

இந்த பகுதியில் உங்களை பற்றிய சொந்த விவரங்கள் கொடுக்கப்பட்டுள்ளது. இதற்கு தகுந்த விடை அளிக்குமாறு கேட்டுக்கொள்கிறேன். நீங்கள் தரும் விவரங்கள் ரகசியமாக வைத்துக் கொள்ளப்படும்.

தேதி: பங்கேற்பவர் எண்:

1. வயது (வருடங்களில்)

அ) 45 - 46 ( )

ஆ) 49 - 52 ( )

இ) 53 - 56 ( )

2. கல்வித்தகுதி

அ) படிக்கவில்லை ( )

ஆ) ஆரம்பநிலை கல்வி ( )

இ) நடுநிலைக்கல்வி ( )

ஈ) மேல்நிலைக்கல்வி ( )

உ) பட்டதாரி அல்லது அதற்குமேல் ( )

3. தொழில்

அ) இல்லத்தரசி ( )

ஆ) கூலி ( )

இ) தனியார் தொழிலாளி ( )

ஈ) அரசு ஊழியர் ( )

4. குடும்ப வகை

அ) தனிக்குடும்பம் ( )

ஆ) கூட்டுக்குடும்பம் ( )

இ) பெரியக்குடும்பம் ( )

5. குடும்ப மாதவருமானம்

அ) ரூ.5000க்கு கீழ் ( )

ஆ) ரூ.5001 - 10000 வரை ( )

இ) ரூ.10001க்கு மேல் ( )

6. திருமண தகுதி

அ) திருமணமானவர் ( )

ஆ) திருமணமாகாதவர் ( )

7. உணவுப் பழக்கம்

அ) சைவம் ( )

ஆ) அசைவம் ( )

8. குழந்தைகளின் எண்ணிக்கை

அ) ஒன்று ( )

ஆ) இரண்டு - மூன்று ( )

இ) மூன்று - நான்கு ( )

ஈ) நான்கு மற்றும் அதற்கு மேல் ( )

9.நீங்கள் மாதவிடாயற்ற நிலையை எப்பொழுது அடைந்தீர்கள்?

அ) 1 வருடத்திற்கு முன் ( )

ஆ) 2 வருடத்திற்கு முன் ( )

இ) 3 வருடத்திற்கு முன் ( )

ஈ) 3 வருடத்திற்கு மேல் ( )

பிரிவு - ஆ

வ. எண்	அறிகுறிகள்	இல்லவே இல்லை	எப்பொழுதாவது	சில சமயம்	அடிக்கடி	எப்பொழுதும்
அ.	**உடல்ரீதியான அறிகுறிகள்**					
1.	எப்பொழுதெல்லாம் உங்களுடைய இதயம் வேகமாகவும், பலமாகவும் துடிப்பதாக உணர்கிறீர்கள்?					
2.	எப்பொழுதெல்லாம் உங்களுக்கு இரவு நேர தூக்கத்தில் தொந்தரவு ஏற்படுவதாக உணர்கிறீர்கள்?					
3.	எப்பொழுதெல்லாம் நீங்கள் சோர்வடைந்து விட்டதாக உணர்கிறீர்கள்?					
4.	எப்பொழுதெல்லாம் நீங்கள் மகிழ்ச்சியுற்றதாக உணர்ந்திருக்கிறீர்?					
5.	எப்பொழுதெல்லாம் உங்களுக்கு தலை மற்றும் உடம்பு பகுதியை இழுத்து பிடிப்பது போல் உள்ளது?					
6.	எப்பொழுதெல்லாம் உங்கள் உடம்பில் மரத்துப்போன நிலையை உணர்கிறீர்கள்?					
7.	எப்பொழுதெல்லாம் உங்களுக்கு மூட்டு மற்றும் தசைகளில் வலி ஏற்பட்டுள்ளது?					
8.	எப்பொழுதெல்லாம் நீங்கள் கை மற்றும் கால்களில் உணர்ச்சி இல்லாதது போல் உணர்ந்திருக்கிறீர்கள்?					

9.	எப்பொழுதெல்லாம் உங்களுக்கு மூச்சுத்திணறல் ஏற்பட்டுள்ளது அல்லது ஏற்படுகிறது?					
10.	எப்பொழுதெல்லாம் உங்களுக்கு உடல் சூடு அதிகமாவது போல் உள்ளது?					
11.	எப்பொழுதெல்லாம் உங்களுக்கு இரவில் அதிக வியர்வை ஏற்பட்டுள்ளது?					
ஆ.	**மனதில் ஏற்படும் அறிகுறிகள்**					
1.	எப்பொழுதெல்லாம் நீங்கள் சிறிய விஷயத்திற்காக அதிகமாக கோபப்படுவீர்கள்?					
2.	எப்பொழுதெல்லாம் நீங்கள் திடீரென்று மகிழ்ச்சி அடைந்திருப்பீர்கள்?					
3.	எப்பொழுதெல்லாம் உங்கள் வேலையில் கவனக்குறைவு ஏற்பட்டுள்ளது?					
4.	எப்பொழுதெல்லாம் நீங்கள் செய்யும் வேலையில் ஆர்வத்தை இழந்திருக்கிறீர்கள்?					
5.	எப்பொழுதெல்லாம் நீங்கள் மகிழ்ச்சியற்று இருப்பதாக உணர்ந்திருக்கிறீர்கள்?					
6.	எப்பொழுதெல்லாம் உடனே அழுதுவிட வேண்டும் என்று நினைத்திருக்கிறீர்கள்?					
7.	எப்பொழுதெல்லாம் நீங்கள் உடனே எரிச்சல் அடைவதாக உணர்ந்து இருக்கின்றீர்கள்?					
8.	எப்பொழுதெல்லாம் உங்களுக்கு தலைவலி ஏற்பட்டுள்ளது?					

SOYABEAN PREPARATION

Definition

Soyabean is one of the nutritious pulses available under cultivation. It contains all macro nutrients for good nutrition, protein, fat, carbohydrates, calcium, iron, Vitamin B_1 and phyto-estrogens which are used to alleviate the menopausal problems.

Nutritive value for 50gm of soyabean

Protein	21.6 gm
Fat	9.75 gm
CHO	10.45gm
Calcium	120 mg
Iron	5.2 mg
Vitamin B_1	0.365 mg
Phyto-estrogen	51960 μg

Purposes of soyabean

- Those who take soy protein daily reduction of cholesterol levels and menopause symptoms
- Soyabean has the natural hormone of phytoestrogen
- Soy product can protect against disease.
- Consuming soy isoflavins may reduce the frequency and intensity of hot flushes in menopausal women.

Preparation of boiled soyabeans

Ingredients

- Soyabean
- Water
- Salt

Procedure of preparation

- Wash hands
- Take 50gms of soyabean for each menopausal women
- Soak it in water for 8-10 hrs
- Boil the soyabean with salt and water
- 50gm of soyabean is given to each menopausal women once a day for 21 days.

ANNEXURE - E

CONTENT VALIDITY CERTIFICATE

This is to certify that the tool developed by **Miss.A.P.MANIMEGALAI,** Final year M.Sc Nursing Student of Sri Gokulum College of Nursing, Salem (Affiliated to The Tamilnadu Dr.M.G.R. Medical University) is validated and can proceed with this tool and content for the main study entitled **"A Study To Evaluate The Effectiveness Of Soyabeans On Menopausal Symptoms In Post Menopausal Women At Selected Rural Community Area, Salem"**.

Date: Signature:

Place: Name:

Designation:

ANNEXURE - F

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Dr. P. Chellammal, M.D., D.G.O.,**
   Consultant, Obstetrician and Gynecologist,
   Sri Gokulam Hospital,
   Salem.

2. **Mr.K.Kannan, M.Sc (Food & Nutrition)**
   Consultant Dietician,
   Sri Gokulam Hospital,
   Salem.

3. **Mrs. Naganandhini, M.Sc(N).,**
   Associate Professor,
   Department of Mental Health Nursing,
   Vinayaka Mission Annapoorna College of Nursing,
   Salem.

4. **Dr. Selvanayaki, Ph.D (N).,**
   Principal,
   Department of Obstetrical Gynaecological Nursing,
   Vinayaka Mission Annapoorna College of Nursing,
   Salem.

5. **Mrs. Thilagavathi, M.Sc (N).,**
   Assistant Professor,
   Department of Obstetrical Gynaecological Nursing,
   Shanmuga College of Nursing,
   Salem.

6. **Mrs. Sheela Theres , M.Sc (N).,**
   Lecturer,
   Sri Gokulam College of Nursing,
   Salem.

ANNEXURE -G

CERTIFICATE

Certified that the dissertation paper titled **"A Study To Evaluate The Effectiveness Of Soyabeans On Menopausal Symptoms In Post Menopausal Women At Selected Rural Community Area, Salem"** by **Miss.A.P.Manimegalai,** has been checked for accuracy and correctness of English language usage, and that the language used in presenting the paper is lucid, unambiguous, free of grammatical / spelling errors and apt for the purpose.

WINGS®
ENGLISH ACADEMY
1,2,3, IInd Floor Ratna Complex,
Five Roads, SALEM-636 004.

Signature:

Name and designation:

ANNEXURE – H

PHOTOS

ASSESSING THE MENOPAUSAL SYMPTOMS

ADMINISTERING SOYA BEANS