A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON IMPORTANCE OF CALCIUM RICH DIET DURING PRE-MENOPAUSAL STAGE AMONG WOMEN IN SELECTED VILLAGES OF PUNJAB.

Parwinder Kaur

Assistant Professor (Obstetrics and Gynecological Nursing**)**

Life Guard Nursing Institute Sangrur

Guide
- **Prof (Dr.) RAJWANT KAUR RANDHAWA**
  (Professor Cum Principal)
  - **Dr. Priyanka Chaudhary**
    (Associate Professor)

ABSTRACT

RESEARCH PROBLEM: A Study to assess the effectiveness of structured teaching program regarding importance of calcium rich diet during pre-menopausal stage among women in selected villages of district Sangrur, Punjab.

BACKGROUND OF THE STUDY: Osteoporosis is an increasing public health problem worldwide. It is characterized by low bone mass and micro architectural deterioration of bone tissue, leading to enhanced bone fragility and consequent increase in risk for Fracture. It has been estimated that in 1990, 1.7 million people globally suffered from Osteoporosis hip fractures. The number might increase to 6.3 million by 2050. The Indian statistics reveal that 6.1 crore people in India are osteoporotic; of these 50 lakhs will have Osteoporotic fracture.

MATERIAL AND METHODS: A quantitative approach with pre experimental one group pre test and post test design was used for this study. The sample consisted of 50 women in selected villages of district Sangrur. The sample was chosen by purposive sampling by lottery method. The data was collected by using structured knowledge questionnaire. Data was analyzed by using descriptive and inferential statistics.

RESULTS: The result shows that 32(64%) of the Women had inadequate knowledge, 18(36%) of the Women had moderate knowledge level in the Pre test. Further, none of the Women had adequate knowledge on importance of Calcium rich diet during Pre-menopausal stage among Women in the Pre test. In post test 16(32%) of the Women had moderately adequate knowledge level and 34(68%) of Women had adequate knowledge level in the Post test. Further, none of the Women had inadequate knowledge level in the Post test. Level of significance at 0.05 and shows the effectiveness structured teaching program on calcium rich diet. Hence, there is statistical significant association in knowledge level of Women with other selected variables such as Age, physical activity, age at menarche, interval of menstrual cycle, and food habit respectively in the Pre test.

There is statistical significant association in knowledge level of Women with other selected variables such as Age, age at menarche, interval of menstrual cycle, type of menstrual flow respectively in the Post test.

There is no statistical significant association in knowledge level of Women with other selected variables such as Educational level; type of menstrual flow, Religion, food habits, number of children and type of family respectively in the Pre test.

There is no statistical significant association in knowledge level of women with other selected variables such as Educational level, Physical activity, Religion, food habit, number of children, family income and type of family, respectively in the Post test.

CONCLUSION: It is concluded that women have good knowledge regarding importance of calcium rich diet.

INTRODUCTION

Background of the Study

"Calcium rich diet or losing bone tissue, it's up to you." (Bettykovaas)

Calcium is one of the major mineral elements of the body's growth and function. It is an integral part of bones structure, providing rigid frame that holds the body upright and serve as attachment points for muscles, making motion possible. It also serves as Calcium bank, offering readily available source of the mineral to the body fluids. Calcium is essentially important at menopausal transition period (Pre-menopause) it is the phase before menopause actually takes place, when ovarian hormone production is declining and fluctuating causing changes in their menstrual cycle. When estrogen levels begins to drop, the follicular phase of the cycle may be shortened, and these can shortened the total cycle to 26 to 24 days resulting in more frequent periods. On the other hand, some woman begins to have longer cycles because they are not ovulating as frequently. These changes can be quite different on an individual basis. Additionally this fluctuating estrogen level can produce symptoms like hot flashes, breast tenderness and many other complications. This often happens at the age between 35 and 45 years. This is the time when Calcium absorptions slows down with the decline in estrogen level leaving bones without the protective bone building properties of this hormones. In turn, the susceptibility to thinning of bones increases and one becomes susceptible for Osteoporosis.

Pre-menopausal and menopause are phase through which a women goes during her life time. Each phase is unique with a slight change in nutritional needs, helping the women to sail gracefully from childhood to womanhood and stay strong, hearty and happy through the graying years".

Pre menopause is a period during which the regular cyclical occurrence of menstruation is disrupted and menstruation becomes irregular. This phase may last anywhere from six months to year. During the pre-menopausal period, the regular cyclical occurrence of menstruation is disrupted and menstruations become irregular. This phase may last anywhere from six months to a year. During the Pre-menopausal period, production of estrogen is reduced and eventually stops. Menopause is defined as the cessation of the menstrual period.

In India, 1 in 4 women over the age of 50 years in India are Osteoporotic. But the disease can strike at any age. A 50 year old woman has at least a 40% risk of an Osteoporotic fracture during the remainder of her life. Up to 20% of individual who fractured a hip, die as a result of complication. 50% of those who survive remain permanently disabled. More women die each year as the result of osteoporotic fractures than from breast and ovarian cancer combined.

Need of the Study

Calcium is the most abundant mineral in the body. This mineral is crucial for life. Every cell in the body needs Calcium to function properly. Calcium is the top macro mineral when it comes to our bones. The mineral help built strong bones and is a primary structural constituent of the skeleton.

Calcium absorption tends to decrease with increase age for both man and women. It is essentially important at menopause because Calcium absorption seems to slow down with the declining in the estrogen level. Estrogen therapy works to restore Post-menopausal bone remodeling leading to lower rate of bone loss. Estrogen interacts with supplemental Calcium by increasing Calcium absorption in the gut. Adequate amount of Calcium in the diet may help slow the rate of bone loss for all women. Many women may know the importance of Calcium in the diet. However, they may not be aware of the recommended daily allowance of Calcium intake. Thus, it is very important for the researcher to impart education regarding intake of Calcium according to recommended daily allowance to prevent further complications.

OBJECTIVES

1. To assess the Pre-test knowledge score on importance of Calcium rich diet during premenopausal stage among women.
2. To develop and administer Structured Teaching Programme regarding importance of Calcium rich diet during premenopausal stage among women.
3. To assess the Post-test knowledge score regarding importance of calcium rich during the premenopausal stage among women
4. To evaluate the effectiveness of Structured Teaching Programme by comparing Pre-test and Post-test scores.
5. To find out the association of Pre-test & Post-test knowledge scores regarding Calcium Rich Diet during Pre-menopause stage among women with their selected demographic variables.

RESEARCH APPROACH

A quantitative research approach was used to evaluate the effectiveness of structured teaching program regarding importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab and their relationship with selected demographic variables.

RESEARCH DESIGN

Research design chosen for the present study was pre-experimental one group pre test and post test design.

SCHEMATIC REPRESENTATION OF THE RESEARCH DESIGN

GROUP	Pre test	Intervention	Post test	O1	X
O2					

Schematic representation of the research design

Key:

O1 – Pre-test knowledge on importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab.

O2 – Post-test knowledge on importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab.

X - Structured teaching program on importance of Calcium Rich Diet among women during Pre-menopause stage.

INDEPENDENT VARIABLES

The Independent variable included in the study is structured teaching program regarding importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab.

DEPENDENT VARIABLES

The dependent variables included in the study were knowledge on importance on calcium rich diet during premenopausal stage.

RESEARCH SETTING

The study was conducted in different villages of Punjab. The study was conducted among the women of following villages namely Bhindran,Kaloudi, Balian,Khurana,Ghaban.The rational for the selection of this area was the investigator familiarity with the setting and convenience in getting cooperation from the concerned authority for conducting the study.

POPULATION

The target population includes 50 women in selected villages of Distt. Sangrur, Punjab.

SAMPLE SIZE

A sample size consists of 50 women in selected villages of Punjab.

SAMPLING TECHNIQUE

Purposive Sampling was employed to collect data.

INCLUSION AND EXCLUSION CRITERIA

Inclusion Criteria:

- Women who are willing to participate in the study.
- Women in selected villages of Punjab between the age group of 38-45 years.
- Women in selected villages of Punjab who have not attained Menopause.

Exclusion Criteria:

- Women in selected villages of Punjab who have attained Menopause.
- Women in selected villages of Punjab who were absent on the day of present study.

DEVELOPMENT AND DESCRIPTION OF TOOL

The self structured Questionnaire was used to evaluate the effectiveness of structured teaching program regarding importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab. Self – structured Questionnaire was prepared after extensive review of literature, expert's opinions and investigator's own experience in the community and questionnaire technique method was used to collect data. To accomplish the objectives of the study research tool was constructed in the following parts:

Section A: Demographic Data

Section B: Self-structured Questionnaire

Section A: Demographic Data: This part consists of 10 items obtaining personnel information about respondent i.e. age, marital status, educational level, physical activity, religion, type of food habit, number of children, family income, type of family, source of information, age at Menarche, interval of menstrual cycle, type of menstrual flow.

Section B: Self-structured Questionnaire: This part consists of self-structured questionnaire to evaluate the effectiveness of structured teaching program regarding importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab.

The self-structured questionnaire consists of 30 items related to importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab.

CRITERION MEASURE

Each correct response by respondent carries one (1) and incorrect response carries 0 marks.

Maximum knowledge score: 30

Minimum knowledge score: 0

Knowledge score categorized into 3 levels:

Level of knowledge	Score	Percentage (%)
Adequate	21-30	61-100%
Moderate	11-20	31-66%
Inadequate	0-10	0-33%

Validity of the Tool

Content validity of the tool was done by the expert's opinion on the relevance of the items. The tool was given for validity to 7 experts in the field of obstetrical nursing and obstetricians. As per their

Suggestions, 4 items deleted from knowledge Questionnaire. The tool was further modified as per the recommendations of the nursing experts; guidance was sought for the preparation of the structured teaching program regarding importance of calcium rich diet during premenopausal stage among women in selected villages of Punjab. The tool was translated into Punjabi language and validity of tool was established.

ETHICAL CONSIDERATIONS

With the view of ethical consideration, the researcher had taken permission from institutional research committee and discusses the type and purpose of the study with appropriate authorities and then permission was taken to collect the data. Women in selected villages of Punjab were explained about the purpose of the study and informed verbal consent was taken from women in selected villages of Punjab who were willing to participate in the study and they were assured of the confidentiality.

PILOT STUDY

"A pilot study is a kind of small-scale rehearsal on the subjects, but these subjects are not a part of the actual study."
Sharma S.K (2011)

Pilot study was conducted in the first week of the May 2017 to check feasibility of the study. Written permission was taken from Principal Desh Bhagat University Mandi Gobindgarh. Verbal consent obtained from the participants after explaining the purpose of the study. Sample of (10) women in selected villages of Punjab who met the inclusion criteria were selected by using purposive sampling method. The pilot study was conducted for women in selected villages of Punjab who were residing in the village Mangwal (Sangrur). The tool was administered personally by visiting the women in selected villages of Punjab. Pre test was conducted and structured teaching was given followed by post test was conducted for the women in selected villages of Punjab. The knowledge of women in selected villages of Punjab regarding importance of calcium rich diet among premenopausal stage was assessed by self structured questionnaire.

The time taken for the completion of full tool varied from 30 minutes. It was found feasible and practicable to conduct the main study.

RELIABILITY OF THE TOOL

The reliability of the tool was assessed by Split Half method using Karl Pearson's coefficient correlation. The reliability of the tool was found to be 0.82 and it was reliable.

Discussion

The findings of the study were based on its objectives and are discussed under the following headings:-

First Objective: To assess the Pre-test knowledge score regarding importance of Calcium rich diet during premenopausal stage among women.

Pre test knowledge levels of Women on importance of Calcium rich diet during Pre-menopausal stage among Women. The result shows that 64 (64%) of the Women had inadequate knowledge, 36 (36%) of the Women had moderate knowledge level in the Pre test. Further, none of the Women had adequate knowledge on importance of Calcium rich diet during Pre-menopausal stage among Women in the Pre test.

The findings of the study was supported by a study on "Nutritional influences on bone mineral density: a cross sectional study in Pre-menopausal women" In this study an opportunistic sample of 622 women aged between 25 and 49 years. Despite reporting higher than average educational attainment and health consciousness, these women demonstrated average levels of knowledge about importance of Calcium rich diet and Osteoporosis risk factors. Women had low feelings of susceptibility towards development of Osteoporosis and had insufficient knowledge and were in need of education program settings regarding Osteoporosis prevention and lifestyle modifications, especially exercises and Calcium and vitamin D rich diet.

Second objective: To provide Structured Teaching Programme regarding importance of Calcium rich diet during premenopausal stage among women.

The comparison of overall Pre and Post test Mean Knowledge level on importance of Calcium rich diet during Pre-menopausal stage among Women. The mean knowledge score of the Pre test was 40.3% and SD was 3.7 whereas, the mean knowledge score of the Post test was 80.2% and SD was 2.2 respectively. Further, the enhancement of mean knowledge was found to be 39.8% from Pre test to Post test. The statistical Paired 't' test was found to be 28.14* indicating significant enhancement of knowledge score from Pre test to Post test at $P< 0.05$ revealing the effectiveness of Structured Teaching Programme on importance of Calcium rich diet during Pre-menopausal stage among Women.

The findings of this study is consistent with the findings of the study conducted on "Knowledge and Effectiveness of Osteoporosis Education in the Outpatient Orthopedic Setting"**,** In this study 80 female patients ranging from 15 to 73 years of age were assessed regarding their knowledge on Osteoporosis, Calcium intake, menopausal status, exercise, smoking, and whether or not they had had a bone mineral density scan. After that an educational intervention was performed by providing the patients with an informational handout. In response to the educational intervention, significant improvements were seen in terms of patient's ability to define Osteoporosis (p=0.004), the ability to identify being female as a major risk factor (p<0.001) and the understanding that females should begin adequate Calcium intake at a young age (p<0.001). Significant increases in daily Calcium intake (p<0.001) and exercise level also

occurred ($p<0.003$). The education program setting represents a prime opportunity for education regarding Osteoporosis prevention and lifestyle modification that can be performed in an inexpensive fashion and that can be easily replicated in most offices both in the community and in academic settings.

Third objective: To assess the Post-test knowledge score on importance of calcium rich during the premenopausal stage among women

68 (68.0%) of the Women had adequate knowledge level and 32 (32.0%) of Women had moderate knowledge level in the Post test. Further, none of the Women had inadequate knowledge level in the Post test.

However, this study reveals that, the Structured Teaching Programme on Importance of Calcium rich diet during Pre-menopausal stage among Women was effective. Thus, the analysis reveals that there is significant difference between Pre test and Post test knowledge score of Women on Importance of Calcium Rich diet during Pre- menopausal stage. Hence, the Researcher based on the findings, stated that the Research hypothesis **(RH₁) "There is a significant difference between Pre and Post test knowledge scores on Importance of Calcium Rich diet during Pre-menopausal stage among Women "has been accepted.**

Objective fourth: To evaluate the effectiveness of Structured Teaching Programme by comparing Pre-test and Post-test scores.

The comparison of overall Pre and Post test Mean Knowledge level on importance of Calcium rich diet during Pre-menopausal stage among Women. The mean knowledge score of the Pre test was 40.3% and SD was 3.7 whereas, the mean knowledge score of the Post test was 80.2% and SD was 2.2 respectively. Further, the enhancement of mean knowledge was found to be 39.8% from Pre test to Post test. The statistical Paired 't' test was found to be 28.14* indicating significant enhancement of knowledge score from Pre test to Post test at $P< 0.05$ revealing the effectiveness of Structured Teaching Programme on importance of Calcium rich diet during Pre-menopausal stage among Women.

Objective fifth: To find out the association of Pre-test Post-test knowledge scores regarding Calcium Rich Diet during Pre-menopause stage among women with their selected demographic variables.

The association between selected Sociodemographic variables and knowledge level in Pre test among Women regarding importance of Calcium rich diet during Pre-menopausal stage.

The association of Age and knowledge level reveals that 78.6% belongs to the age group of 56-60 years who had adequate knowledge level, followed by 76.5% of 45-55 years and 47.36% Women in the age group of 39-44 years had

inadequate knowledge. It is interesting to note that there is significant association between age and knowledge level of Women (χ^2=4.756*) at p<0.05.

The association between the physical activity and knowledge level of the Pre test shows that 78.5 % of the Women who performs Yoga had inadequate knowledge, followed by 56% Women who perform exercise and the remaining 36.4% Women who do not perform any forms of physical activity had moderately inadequate knowledge. It is found that there is significant association between the Physical activity and knowledge level of Women (χ^2 = 4.587*) at p<0.05.

The association between the age of menarche and knowledge level depicts that 71.4% attended menarche at 13-14 years had adequate knowledge and 50% attended menarche at 15-16 years had moderately moderately adequate knowledge. It is found that there is significant association between the age of menarche and knowledge level of women (χ^2 = 1.53*) at p<0.05.

The association between the Interval of menstrual cycle and knowledge level depicts those 52.5 % women who have menstrual cycle between 25-27 days, had adequate knowledge level, and followed by women who had menstrual cycle between 28-30 days, had moderately adequate knowledge level. It is found that there is significant association between the Interval of menstrual cycle and knowledge level of women (χ^2 = 3.40*) at p<0.05.

The association between Food habit and knowledge level of women depicts that 73.35 non-vegetarian women had adequate knowledge level , followed by 70% who are both vegetarian as well as non-vegetarian and 56% women are vegetarian had moderately adequate knowledge level. It is observed that there is significant association between the food habit of women and knowledge level (χ^2 = 1.42*) at p<0.05.

There is no statistical significant association in knowledge level of Women with other selected variables such as Educational level; type of menstrual flow, Religion, food habits, number of children and type of family respectively in the Pre test.

Conclusion

The present research study is concluded with implications to nursing fields, limitations, and delimitations with study designs and methods and recommendations for the future. The focus of this study was to evaluate the effectiveness of structured teaching program on Importance of Calcium Rich diet during Pre-menopausal stage among Women in selected Villages of Punjab.

The study involved group Pre and Post test using pre experimental design, with non-probability sampling technique in which purposive sampling method was used to draw the samples. The size of sample was 50 Women and selection of the sample was done according to selected inclusion and exclusion criteria. The Women completed the self administered structured knowledge questionnaire in the Pre test followed by implementation of structured teaching program on the same day. Post test was conducted 7 days after the structured teaching program using the self administered structured knowledge questionnaire to find out the effectiveness of the intervention. The results were analyzed by using both descriptive and inferential statistics.

RECOMMENDATIONS

On the basis of the findings of the study following recommendations have been made.

- A similar study can be replicated on large sample to generalize the findings.
- An experimental study can be conducted with control group for the effective comparison of the results.
- A similar study can be conducted among different occupations during pre-menopausal stage.
- A study can be carried out to evaluate the efficiency of various teaching strategies like self-instructional module, pamphlets, leaflets, and computer assisted instruction on importance of Calcium rich diet during Pre-menopausal stage.
- A study can be conducted by including other additional socio- demographic variables that may influence the level of knowledge of the Women.
- A study can be carried out to evaluate the effectiveness of structured teaching programme /IEC package on importance of calcium rich diet intake during Pre-menopausal stage.

References

1. Mary Fraser (1990) "Using Conceptual Nursing in Practices" 1st ed. London: Harper and Row Ltd; pg no. 88-90.

2. Boonon S, Bischoff-Ferrari HA, Cooper C, Lips P, L Junggren O, Meunier et al.(1995) Optimal Calcium intake sponsored by National Institutes of health continuing medical education; 11(5): 409-17.

3. Whitney Eleanor Noss,(1996) Rolfes. Sharon Rady. Understanding Nutrition. 7th ed. Philadelphia: West publishing company; .P.43

4. SA New, C Bolton-Smith, DA Grubb and DM Reid. (1997) Nutritional influences on bone mineral density: a cross-sectional study in Pre-menopausal women. American Journal of Clinical Nutrition, Vol. 65, 1831-1839, Copyright © by the American Society for Clinical Nutrition, Inc.

5. Truswell Steward A. (2000) ABC of nutrition. 2nd ed. England: Thanet Press Ltd;. P.43.

6. Hartard M, Haber P,Illieva D, et al . (2000) Systematic training as a model of therapeutic Intervention.

7. Hilibrand AS, Splindler KP, Booden D. Towards Optimum health.(2000) Journal of women's Health and Gender based medicine; Vol. 9.

8. Peterson BA, Klesges RC, Kaufman EM, Cooper TV, Vukadinovich CM. (2000) The effects of an educational intervention on calcium intake and bone mineral content in young women with low calcium intake. Am J Health Promot. ;14(3):149-56.

9. SmeltzerSuzzane C, Bare Brenda G.Brunner and Suddhart's (2001) "Textbook of Medical Surgical Nursing", 9th ed. Philadelphia: J.B. Lippincott Company; P.181-183.

10. Shapses SA, Von Thun NL, Heymsfield SB, Ricci TA, Ospina M, Pierson RN Jr, Stahl T. (2001) Bone turnover and density in obese premenopausal women during moderate weight loss and calcium supplementation. J Bone Miner Res.;16(7):1329-36.

11. Sasaki S, Yanagibori R. (2001) Association between current nutrient intakes and bone mineral density at calcaneus in Pre- and Postmenopausal Japanese women. J Nutrition Science Vitaminol (Tokyo).;47(4):289-94.