A study to determine Effectiveness of the Informational Booklet on Menopausal Problems and Coping Strategies among Menopausal Women in Selected areas in Kurnool, Andhra Pradesh.

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Abstract
A study to determine "The effectiveness of the Informational booklet on Menopausal Problems and coping strategies among Menopausal women in selected areas in Kurnool, Andhra Pradesh was conducted by Smt. N. Manjula Rani, in Partial fulfillment of the requirement for the award of a degree of Master of science in Nursing at "Apollo college of Nursing, Hyderabad under Dr. N.T.R University of Health Sciences, Vijayawada during the year 2008-2010.
Each woman is unique and must make her own informed decision about her health. Life expectancy is rising. Women can expect to live greater portions of their lives postmenopausal.
The Objectives of the study were:
- *To assess the existing knowledge on menopausal problems and coping strategies of menopausal women.*
- *To evaluate gain in knowledge among menopausal women before and after the administration of Informational booklet on menopausal problems and coping strategies.*
- *To find out the relationship between knowledge on menopausal problems and coping strategies with selected demographic variables.*

The review of literature provided the base line for the development of the structured questionnaire and Informational booklet. An experimental research approach with pre experimental one group pretest, post test design was used to achieve the objectives of the study. The study was conducted on 60 women aged 40 to 55 years and working as teachers at different schools of Kurnool and clerks in collector complex by using simple random sampling technique. The information booklet was prepared in a simple and attractive way with self provocating and direct questions. The data was collected by self administered questionnaire on knowledge assessment. Reliability and validity was computed by split half method (r = 0.083). The data was collected after four days gap was given between pretest and posttest for knowledge assessment. Ethical aspects were maintained throughout the study period. Data obtained was analyzed and interpreted.
The overall knowledge score of menopausal women in pretest was 16.98 and 35.50 in post test. The knowledge gained was significant between pre and posttest. Paired 't' test value 18.4, showed that there was a significant improvement between the pre and post test level of knowledge at p = 0.001 (p < 0.01 level of significance). The Chi-Square Values revealed that there was no statistically significant relationship between the selected demographic variables and the knowledge of menopausal women. Informational booklet was found significantly effective in post test among menopausal women who were significantly different in their knowledge as per religion and prior information in the pre test.
The study implies that regular health teaching programmes need to be conducted by nurses to improve the awareness of women regarding menopause. It is a time of change possibly acceptance of menopausal changes and also a time of opportunity to make healthy changes in lifestyle modifications to improve quality of life along reproductive health. The woman should feel that menopause is not a pause in life. It is a period of great opportunity for the woman to learn about self management during menopausal period to lead a quality life.

I. Introduction
Menopause is a normal physiological event in which the body undergoes changes that can affect a woman's social life, her feelings about herself and her ability to function at work. Experiencing menopause is experiencing a transition in the life of a woman.[1]

The onset of menopause not only signals the end of a woman's reproductive function but it is the start of a new phase in which she has the freedom to appreciate the quality of her life. A woman's physical and mental state during this stage of her life will have a significant influence on her in later years. Menopause is a time for new developments, greater freedom and a time when women can look forward with confidence.It is anatural phase in a woman's life that marks not only the end of the fertile period, but also the beginning of a new era in which changes in physiology, metabolism and psyche may become prominent. [2]

The International Menopause Society in collaboration with the world Health Organization has designed October, 18, 2007 as "World Menopause day". It is celebrated around the world symbolizing unity among women, sharing the same experience of menopause.

Menopause is a stage in a woman's life when menstruation stops. It is a natural process & not a disease just as puberty is natural. Puberty prepares a girl to be able to conceive & bear children & menopause prepares a woman to cease from conceiving.

Both puberty & menopause cause a sudden change in the woman's body.[3]During menopause the woman also experiences multiple endocrine, somatic, psychological changes. The physiological hall mark of menopause is the decline in ovarian estrogen production that can have both significant long – term & short – term consequences.

Menopause does not occur over night but it is a gradual process. A woman is said to be in menopause when she has not had her menstrual periods for 12 consecutive months & has no other medical reason for her menstruation to stop. It is a natural transition in a women's life that results from a decrease in the ovarian production of sex hormones – estrogen & progesterone.[4]

JermyPage's world pront Assembly by the Institute for social and Economic change, based in Bangalore (Jan, 23, 2007), reported that Indian women 19% have gone through the change of life by the age of 41. Natural menopause is attained between the ages of 45 and 55 yrs, with the global mean being 51, premature menopause before the age of 40 affects 1% of women world wide.[5]

The health of perimenopausal women can be promoted through diet and exercise. The transition into perimenopause presents an opportunity for addressing health promotion issues, such as diet and exercise. As a woman senses perimenopausal changes, health awareness emerges. Such personal insight motivates the woman to implement lifestyle changes. Diet and exercises represent two modifiable areas of concern for perimenopausal women. Dietary selections of phytoestrogens, calcium, fiber and fat along with exercise plans are relatively simple interventions to begin the process of change needed to ensure her well-being.[6]

The majority of women report menopause related symptoms such as hot flushes, night sweats, vaginal dryness & insomnia etc. These symptoms of menopause are significant and annoying. There are a number of therapies that can help to lessen as well as manage these symptoms effectively.

The most widely used management is Hormonal replacement therapy. Since menopausal symptoms are caused by body's adjustment to decreased levels of hormones, Hormone replacement therapy replaces the hormones and decreases the symptoms.

STATEMENT OF THE PROBLEM
"Effectiveness of the Informational Booklet on Menopausal Problems and Coping Strategies among Menopausal Women in Selected areas in Kurnool, Andhra Pradesh".

OBJECTIVES OF THE STUDY:
➢ To assess the existing knowledge on Menopausal Problems and coping strategies of menopausal women.
➢ To evaluate gain in knowledge among menopausal women before and after the administration of informational booklet on menopausal problems & coping strategies.
➢ To find out the relationship between knowledge on menopausal problems and coping strategies with selected demographic variables.

HYPOTHESES
Null hypotheses: HO1=there is no significant difference between pre test and post test knowledge of menopausal women on menopausal problems and coping strategies.

CONCEPTUAL FRAMEWORK
Conceptual frame work is based on interrelated concepts that are assembled together in some rationale scheme by virtue of their relevance to a common theme. The development of conceptual frame work is a fundamental process required before conducting actual research because it guides each stage of the process.
A conceptual model can be defined as a set of concepts and those assumptions that integrated them into a meaningful configuration. The development of conceptual theoretical frame work is fundamental process

required before conducting actual research. The conceptual frame work influences each stage of research process.

The investigator adopts Roy's adaptation model, for the present study. The investigator takes the base of the 21st century scientific assumptions of Sis.Callista Roy's adaptation model, specifically that persons and environment transformations are created in human consciousness.

Research Approach and Design

Research Approach utilized in this study was evaluative approach. It is applied form of research whose methodologies have evolved with in such fields as education and public policy. Evaluation approach focuses on developing useful information about a program, practice, procedure or policy information that is needed by decision makers about whether to adopt modify or abandon a practice or program. Often the evaluation is of a new intervention.[42]

An evaluation on informational booklet as treatment can be done using experimental design.

In this study there was only experimental group and no control group. It is the name applied to experimental designs that are considered very weak and in which the researcher has little control over the research. [43] One type of pre experimental design will be the one group pre test- post test design provides a comparison between a group of subjects before and after the experimental treatment. Taking control group from the some setting would cause contamination of data. Also it was felt that it would be unethical to with hold the informational booklet from one set of subjects. Therefore pre experimental design was found to be appropriate. One group pretest – post test design was used to evaluate the effectiveness of informational booklet on menopausal problems and coping strategies.

Setting and polpulation

The setting for the present study was collector complex, and schools of KurnoolTown. The staff rooms were used for collecting the data during pretest and post test. Collector Complex has 200 working women Employees and clerks aged 40 and above were 60 in number. Teachers working in 15 schools were 60 in number in that women teachers ages 40 years and above are 30 in number.

The target population of the present study was the school teachers and clerks who are in the age group of 40 – 55 yrs and who attained and are attaining natural menopause.

Sample and sample size

Menopausal women who are available during the study period and who fulfill the inclusive criteria. A total of 60 working women between the age group of 40-55 years were selected.

Sampling Technique

Simple Random sampling method was used. It is a type of probability sampling that that ensures that each element of the population has an equal and independent chance of being chosen[44] Benefits of simple random sampling were, little knowledge of population is needed, Most unbiased of probability methods,Easy to analyze data and compute errors.[45]

 A total of 60 women who are falling in the age group of 40 – 55 years were selected. Initially 5 schools out of 15 schools were selected. In collector complex from different officers clerical working women were selected who are interested to participate in the study in Kurnool town.

Criteria for Sample selection

Inclusion criteria:
1.   The women who are in the age group of 40 to 55 yrs.
2.   Women who were in the natural process of attaining or attained menopause.
3.   The women who are working in the collector complex and different school of Kurnool town.
4.   The women who are willing to participate in the study by going through the informational booklet completely.
5.   Women who were available at the time of data collection.

Exclusion   criteria:
1.   Women who have expressed disinterest in reading information booklet complete.
2.   Women who were not present in the offices, schools at the time of data collection.
3.   Women who are not in the age group of 40 – 55 yrs.
4.   Women who had hysterectomy operation.

Description of the tool
The data collection instrument was developed with the help of extensive review of literature, books, journals and experts discussion with self administered questionnaire on menopausal problems and coping strategies were prepared. The respondents were given and explanation about the process for filling in the tool. The tool consisted of 3 parts.

Part- I – Deals with Demographic data: This Part consists of items to gather information of the sample such as age, religion, education, occupation, income, type of family, menustruating states and source of information .

Part-II - Data: deals with knowledge questions regarding menopausal problems. The items/questions were developed and distributed in the following areas:

Basic concepts on menopausal problems	-	8 items.
Body changes /experiences of menopausal period	-	8 items.
Menopausal problems	-	6 items.
Management of menopausal problems	-	4 items.

Part-III - Data: deals with coping strategies / Self management practices on menopausal problems contains of 14 items.

All knowledge questions were constructed with multiple choice responses with one choice as correct answer. Only 10 items under coping strategies were prepared as yes or no check list. The total score of the tool was 40.
Score: The knowledge on menopause was measured in terms of knowledge scores. Every right response was given one score.

The tool was validated by experts in the field of obstetrics and gynecology, medicine and in Nursing. Modification of few items was done based on the recommendation of the experts.

Consistency of the tool was assessed by using test – retest method. The reliability co-efficient was found to be reliable. The tool was found to be reliable value was-0.83.

Data Collection Method
   Questionnaire method was found to be suitable to elicit information from the study sample. After obtaining permission from the concerned authorities the investigator conducted the study. The verbal consent from the sample was taken and they were assured the confidentiality of their individual performance. The investigator introduced her to the sample and the purpose of the study was explained. The pretest was conducted with the help of the structured questionnaire on knowledge about menopausal problems and coping strategies. The informational booklet was administered to all samples. After 4 days of interval the post test was conducted.

The investigator ensured that all the questions were answered without any omission. The average time taken to fill the questionnaire was about 20 to 30 minutes. Ethical issues were given due consideration. No physical or psychological pain was caused. The data were edited for completion.
Plan for data Analysis
The data will be analyzed with the help of the descriptive and inferential statistics.
a) Descriptive Statistics:-
1. Frequency and percentage distribution used to describe the demographic variables.
2. Frequency and percentage distribution used to describe the knowledge scores in pretest and post test.
3. Mean and standard deviation used to evaluate the knowledge in pretest and post test.
b) Inferential Statistics:-
Paired "t" test will be used to find out the difference between pre and post test knowledge scores on menopausal problems.
Chi-square test is used to associate post test knowledge scores with selected demographic variables.

II. Data Analysis And Interpretation

   Analysis means categorizing, ordering, manipulating and summarizing the data, statistically to obtain answers to research. Interpretation is the process of studying the results of analysis, making inferences about the occurrences or relations and drawing conclusions about the relations in terms of purposes of the study being reported.
The data was organized in to sections as follows:

Part 1: Distribution of demographic variables by using frequency & percentage among menopausal women.

Part II: Distribution of knowledge score/ item wise analysis of knowledge on menopausal problems and coping strategies.

Part III: Significant test of knowledge.

Part IV: Test of knowledge with demographic variables.

PART- I

DEMOGRAPHIC DATA

In any research there is need to know the demographic variables of study population, since the findings and interpretations are restricted to particular study sample only.

Table-I:Frequency and Percentage Distribution of Demographic Variables among Menopausal Women.
n=60

Variables	Frequency	Percentage

Age: 40-44years
        45-49years
        50-54years
> 54 years
	27
	21
	8
	4
		45
		35
		13.3
		67

Total	**60**	**100**
Education: Intermediate Graduation Post graduation and above	13 36 11	21.7 60 18.3
Total	**60**	**100**
Occupation Teachers Clerks	20 40	33.3 66.7
Total	**60**	**100**

Table1shows the analysis of the demographic variables. With respect to age majority of menopausal women 45% were aged between 40-44years, 35% were aged between 45-49years, 13.3% were aged 50-54years, and only 6.7% were with 55years.

In relation to education majority (60.0%) of the menopausal women were graduates, 21.7% had education till intermediate and 18.3% were educated with post graduation and above. Considering occupation of menopausal women 66.7% were clerks and 33.3% were teacher
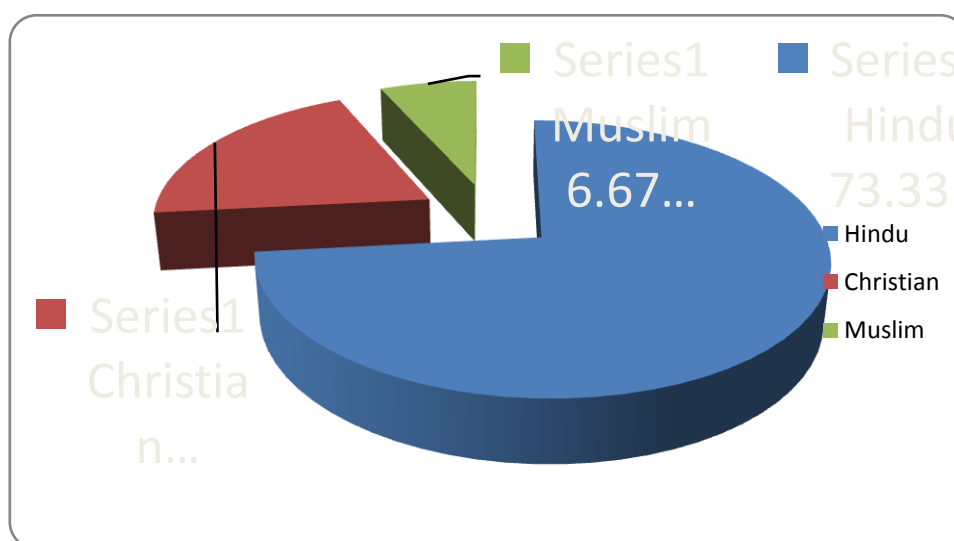
Figure: 3 Pie Diagram Showing Percentage Distribution of Menopausal Women According to the Religion

With regard to religion, majority of the respondents 73.3% were Hindus, 20% were Christians and 6.7% were Muslims.

**Table: 2. Frequency and Percentage Distribution as Per Type of family among Menopausal Women**.
n=60

Type of family:	Frequency	Percentage
• Nuclear family	32	53.3
• Joint family	22	36.7
• Extend family	06	10.0
Total	**60**	**100**

Table: 2.depicts that the type of family, where 53.3% belongs to nuclear family, 36.7% belongs to joint family & only 10% were samples were leading extended family.

Table: 3. Frequency and Percentage Distribution as Per Monthly Menstruation stop among Menopausal Women.
n=60

Monthly menstruation stop:	Frequency	Percentage
No	38	63.3
Yes	22	36.7
Total	**60**	**100**

The above table reveals that 63.3% of women were reported that regularly they have monthly menstruation and 36.7% have attained menopause.
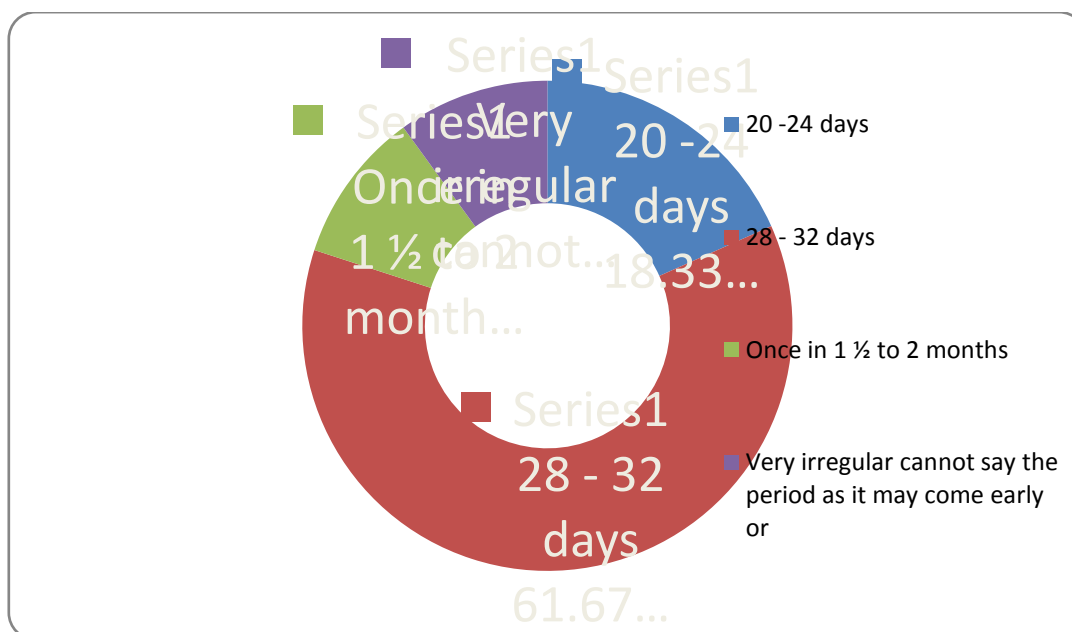
Figure: 4 Doughnut Diagram Showing Percentage Distribution of Menopausal Women according to the Once in How Many Days are you menstruating.

Regarding duration of menstruation among samples were once in 28 to 32 days by 62% of women, 18% of women menstruating once in 20-24days, 10 in each are menstruating once in 1½ to 2 months and very irregular. This means nearly 40% of menopausal women are having either short, longer or irregular cycles.
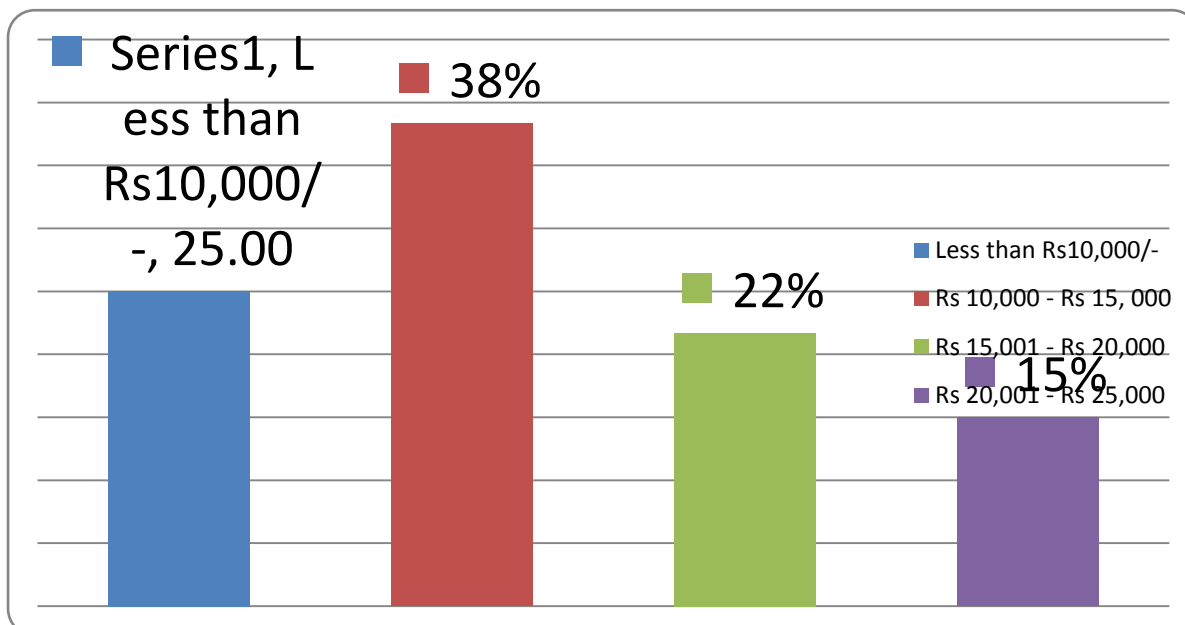
Figure: 5 Bar Diagram Shows Percentage Distribution of Menopausal Women According to the income

With respect to family monthly income of the women, majority 38.3% of them earned Rs10, 000-15,000/-, 21.7% of them earned 20,001-Rs25, 000/-. One fourth have less than Rs. 10,000/-, 15% of them of the menopausal women.

Table: 4 Distribution of Demographic Variables Percentage among Menopausal Women.
n=60

Variables	Frequency	Percentage
Period of not getting menses in years		
0		
<1		
1-2	38	63.3
2-4	1	1.7
5-15	9	15.0
	6	10.0
	6	10
Total	**60**	**100**
Previous sources of information		
Television.		
News paper		
Magazine	12	20.
Medical personal	14	23.3
Books	10	16.7
Others	08	13.3
	16	26.7
	0	0.0
Total	**60**	**100**

In relation to history of menstruation, majority 63.3% were attained menopause, 15.0% were not getting menstruation since one to two years. And 10% women have attained menopause Two- four years back, and 10% women were attained menopause 15 years back.

Considering sources of information 20 % respondents have received previous information through television, almost equal percentage i.e 23.3% have received from news paper, 16.7% from magazine, 13.3 % from medical personnel and 26.7% have received previous information from books.

PART- II
Distribution of Knowledge Score / Item Wise Analysis of Knowledge on Menopausal Problems
Table: 5 Frequency & Percentage Distribution of Knowledge Regarding Basic Concepts.
n=60

Basic concepts of menopause	Test							
	Pre				Post			
	Wrong		Correct		Wrong		Correct	
	F	%	F	%	F	%	F	%
Menopause meaning	20	33.3	40	66.7	1	1.7	59	98.3
Period of Menopause	48	80.0	12	20.0	3	5.0	57	95.0
Average age	13	21.7	47	78.3	0	.0	60	100.0
Decline organ	33	55.0	27	45.0	7	11.7	53	88.3
Sex harmones	32	53.3	28	46.7	0	.0	60	100.0
Stages	54	90.0	6	10.0	5	8.3	55	91.7
Pre menopause	27	45.0	33	55.0	5	8.3	55	91.7
Type of cycles	39	65.0	21	35.0	13	21.7	47	78.3

Table: 5reveal the level of knowledge on basic concepts of menopausal problems.
In relation to meaning of menopause 66.7% had awareness on meaning of menopause 33.3% not aware of the concept of the menopause in pre test. And 98.3% post test samples were aware meaning of menopause and only 1.7% could not improve knowledge on menopause.
With regard to knowledge on menstrual status of women 20% said that women will not menstruate for 12 months, and 80.5% stated that women will not menstruate for Two years in pre test, 95% of subjects said correctly in post test.
With respect to average age for menopause, 78.3% said correctly as 45 years in the pre test and all sample 100% gained adequate knowledge in the post test.

Related to the body's function among menopausal women in pre test 45% of women said that the diminishing ovary function causes menopause in comparison to 88.3% in post test.
Knowledge on female sex hormones was adequate among menopausal women only among 46.7% of women in pre test, and it is good note that all the women have acquired complete knowledge in the post test.
Regarding no. of stages in menopause 10% said correctly as three stages in menopause and 90% had inadequate knowledge in pre test, 91.7% had adequate knowledge and 8.3% had inadequate knowledge in post test.
In regard to knowledge on pre menopausal period, 55% had adequate knowledge, 45% had inadequate knowledge in pretest. 91.7% had adequate knowledge and 8.3% had inadequate knowledge in post test.

Regarding changes in menstruation during menopausal period 35% had adequate knowledge this knowledge was improved to 78.3% in the post test.

Table: 6 Distribution of Knowledge Regarding Body Changes among Menopausal Women in Pre & Post Test.
n=60

Body changes of menopausal period	Test							
	Pre				Post			
	Wrong		Correct		Wrong		Correct	
	F	%	F	%	F	%	F	%
Hot flushes	36	60.0	24	40.0	6	10.0	54	90.0
Possible body changes	55	91.7	5	8.3	8	13.3	52	86.7
Hot flushes period	48	80.0	12	20.0	5	8.3	55	91.7
Associated symptoms	55	91.7	5	8.3	10	16.7	50	83.3
Night sweats	41	68.3	19	31.7	1	1.7	59	98.3
Hunger exercise	52	86.7	8	13.3	12	20.0	48	80.3
Burning extremities	42	70.0	18	30.3	10	16.7	50	83.3
Thick hair	58	96.7	2	3.3	13	21.7	47	78.3

Table: 6 revealed that the knowledge on body experiences during menopausal period.
Regarding meaning of hot flush 40% samples said upon correctly as feeling warmth, 60% stated as feeling cold & headache in pretest. Where as 90% of women told correct concept regarding hot flush only 10% responded incorrectly in the post test.
In relation to body changes among menopausal women the majority 91.7% had not aware of the body changes & only 8.3% had adequate knowledge in pretest. About 86.7% said correctly as flat and saggy breast as change / experience during menopausal period.

The duration of hot flushes was answered correctly by 80% of menopausal women in pre test and the same was answered by correctly 91.7% of menopausal women in post test.

With regard to associated sensation along with hot flushes only 8.3% stated correct as feeling of rubber band snapping underneath skin and 91.7% had not aware of associated sensation along with hot flushes in pretest. 83.3% have gained knowledge in post test.

Related to knowledge on symptoms associate with menopause 31.7% said correctly that excessive sweat in the nights and remaining 68.3% stated incorrectly and the same was increased to 98.3% in post test.

In relation to excessive hunger only13.3% samples had correct concept and 86.7% of the women said that excessive hunger is one of the symptoms associated with menopause and have incorrect knowledge. A surprising mode that this incorrect concept was reduced to only 20% of women where as 80% of them told correctly in post test.

Around 1/3rd (33.3%) of the women know that a women experiences burning sensation in hands and feet during menopausal period and percentage and the women with correct knowledge was increased to 83.3% of the women in post test.

It is surprising that 96.7% of the menopausal women felt hair growth becomes thick. The informational booklet has increased their knowledge from 3.3% in the pre test to 78.3% in the post test. With the highest gained area of knowledge.

Table: 7 Frequency and Percentage Distribution of Knowledge on Menopausal Problems in Pre Test and Post Test.

n=60

Menopausal problems	Test							
	Pre				Post			
	Wrong		Correct		Wrong		Correct	
	F	%	F	%	F	%	F	%
Loss of memory	43	71.7	17	28.3	3	5.0	57	95.0
Sleep disturbance	40	66.7	20	33.3	1	1.7	58	98.3
Bony changes	33	55.0	27	45.0	4	6.7	56	93.3
Urinary problems	44	73.3	16	26.7	2	3.3	58	96.7
High risk disease	51	85.0	9	15.0	8	13.3	52	86.7
Dyspenuria	51	85.0	9	15.0	3	5.0	57	95.0

In relation to menopausal problems of memory loss majority 71.7% had correct concept and 28.3% had wrong concept in pre test. The knowledge increased in post test to 95%.

Regarding sleep disturbances among subjects 33% had adequate knowledge and 66.7% had inadequate knowledge in pre test. Knowledge increased in post test to 98.3% only 1.7% had inadequate knowledge.

In association with skeletal changes among menopausal women 45% said correctly as bones become thin and easily breakable and 55% stated as bones may become long in pretest 93.3% had correct concept and only 6.7% had wrong concept in post test.

In view of urinary problems knowledge among menopausal women, 73.3% had wrong concept among them 20% were stated that it is an inability to pass urine, 30% stated that it is formation of stones in the kidneys and 23.3% stated that they do not know. Rest 26.7% women had correct concept about urinary problems related to menopause in pretest. The knowledge levels increased in post test among subjects to 96.7% and stated it as passing of urine without control on stress and only 3.3% had inadequate knowledge and stated it as the inability to pass urine.

Only 15% of the menopausal women know about the heart diseases, which they are at risk during menopausal period and this awareness was increased to 86.7% of menopausal women.

In regard to the response by the subjects only 15% had correct idea and 85% had wrong concept about the reason for dyspareunia during intercourse, among them 31.6% said it is due to loss of interest in sex, 25% stated that is due to natural pain after 45 years and 28.3% stated that they do not know. And it is a good note that knowledge was increased to 95% in post test.

Table -8 Knowledge Levels of Menopausal Women Regarding Management of Menopausal Problems.
n=60

Management of menopause	Test							
	Pre				Post			
	Wrong		Correct		Wrong		Correct	
	F	%	F	%	F	%	F	%
Aim of HRT	49	81.7	11	18.3	2	3.3	58	96.7
Common form	51	85.0	9	15.0	10	16.7	50	83.3
Calcium benefit	27	45.0	33	55.0	0	0	60	100.0
Best non hormonal therapy	38	63.3	22	36.7	0	0	60	100.0

Table-:8 Reveals the level of knowledge on management of menopausal problems.

Related to therapeutic measures of hormonal replacement therapy for menstrual problems majority 81.7% had inadequate knowledge and 18. 3% had adequate knowledge in pre test, 96.7% samples had adequate knowledge and only 3.3% had inadequate knowledge in post test.

In relation to method the of Hormonal Replacement Therapy majority ie, 85% stated it is in the from of injection and ointments, only 15% said in the form of tablets in pre test and majority 83.3% samples said as it is in the form of tablets and other remaining 16.7% had concept of injections and ointment for Hormonal Replacement Therapy in post test.

Regarding benefit of calcium therapy, 55% said correctly as calcium maintain healthy bones and joints. Among the samples 45% had wrong concept, among them 18.33% said as it improve gum problems, 15% said it improve digestive problems and 11.6% said they do not know in pre test. And in post test all 100% menopausal women had adequate knowledge on benefit of consuming calcium tablets.

In association with non hormonal therapies for the relief of menopausal symptom, majority ie, 63.3% had wrong concept and responded as they do not know and 36.7% had correct concept in pre test, and in post test all the 100% samples understood that yoga provides relief from the menopausal problems.

Table: 9 Frequency and Percentage distribution of Knowledge on Coping Strategies of Among Menopausal Women.
n=60

Coping strategies	Test							
	Pre				Post			
	Wrong		Correct		Wrong		Correct	
	F	%	F	%	F	%	F	%
Daily 500ml drink	12	20.0	48	80.0	4	6.7	56	93.3
Avoid coffee/tea	16	26.7	44	73.3	7	11.7	53	88.3
2-3 litre of water	13	21.7	47	78.3	4	6.7	56	93.3
Walking 30 mts	14	23.3	46	76.7	5	8.5	54	91.5
Abdominal breathing	23	38.3	37	61.7	5	8.3	55	91.7
Yoga for one hour	12	20.0	48	80.0	3	5.0	57	95.0
Positive feelings	17	28.3	43	71.7	4	6.7	56	93.3
Consult doctor	7	11.7	53	88.3	4	6.7	56	93.3
Eye check up	9	15.3	50	84.7	3	5.0	57	95.0
Eating more fruits	10	16.7	50	83.3	1	1.7	59	98.3

The following are the percentage of knowledge in each area of coping strategies both in pre and post test.

In pre test 80% of menopausal women stated that they should take at least 500ml of milk and this knowledge area was increased to 93.3% in post test.

Among the samples 73.3% stated that avoiding the consumption of tea and coffee during menopausal period will help to control the problems in pretest and it was increased up to 88.3% during post test.

In the pretest 78.3% of subjects stated that drinking 2 – 3 litters of water helps to reduce the problems and this knowledge area was increased to 93.3% in post test.

Walking for at least 30 minutes daily will help menopausal women to avoid problems, 76.7% agreed with this in pretest and was increased up to 91.5% in post test.

About abdominal breathing exercise twice a day, 61.7% stated yes during pretest and was increased to 91.7% in post test.

In pretest 80% of subjects stated that practicing of yoga for one hour per day will reduce the problems in pretest and it was increased to 95% in post test.

About promoting positive feelings, 71.7% stated in pretest and 93.3% in post test.

About 88.3% of samples said that menopausal women need to consult a doctor if any unbearable symptom exists in pretest and 93.3% of samples told the same inpost test.

About eye check up every year, 84.7% of samples told in pretest and 95% in post test.

In pre test 83.3% of samples stated that eating more of fruits and vegetables is good in reduction of menopausal problems in pretest and 98.3% in post test.

Table10: Frequency and Percentage Distribution of Knowledge on Basic Facts on Coping Strategies of among Menopausal Women.

n=60

| Basic concepts of coping strategies	Test							
	Pre				Post			
	Wrong		Correct		Wrong		Correct	
	F	%	F	%	F	%	F	%
Meaning of coping strategies	50	83.3	10	16.7	6	10.0	54	90.0
Immediate doctor attention	45	75.0	15	25.0	6	10.0	54	90.0
Exercise to hot flush	51	85.0	9	15.0	13	21.7	47	78.3
Stress reduction	31	51.7	29	48.3	1	1.7	59	98.3

Table: 10 Reveals the knowledge on basic facts on coping strategies for menopausal problems among menopausal women.

Related to meaning of coping strategies majority 83.3% had inadequate knowledge and only 16.7% had adequate knowledge in pretest and the knowledge levels increased to 90.0% in post test and 10% had wrong concept in under standing of self management practices for menopausal problems.

Related to symptom to be reported to doctor as a problem of menopause, 25% said correctly for reporting to doctor when there is an inability to balance upon standing and 75% had wrong concept among them 10% said night sweats, 25% said head ache need to be reported and 40% do not know the answer in pretest and in post test 90.0% had adequate knowledge & only 10% had inadequate knowledge.

With regard to type of exercises 15% said deep breathing exercises controls hot flushes and 81% said cycling & swimming controls hot flushes in pre test and in post test 78.3% had adequate knowledge and 21.7% had inadequate knowledge about type of exercises.

In association with therapeutic measures of relaxation techniques in reducing stress 48.3% samples said correctly that medication reduces stress, 51.7% said that watching movies reduces stress in pre test and in post test knowledge levels increased to 98.3% had adequate knowledge and only 1.7% have not understood the use of relaxation techniques in reducing stress.
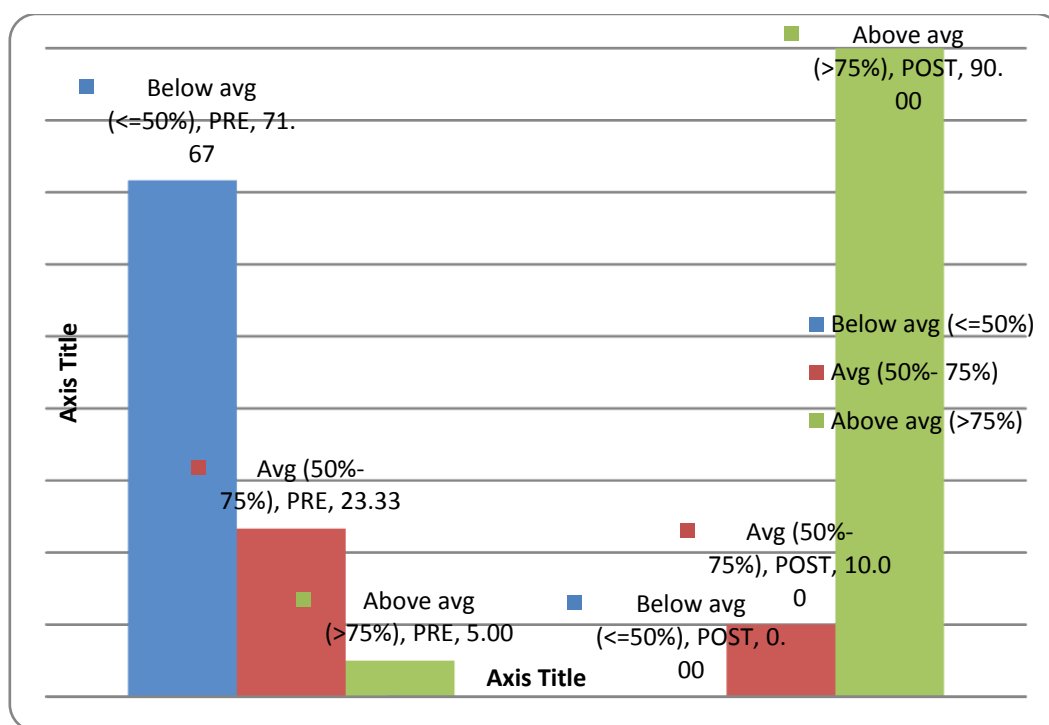
Figure: 6 Percentage distribution of level of knowledge in pre test and post test

Figure:4 the above figure describes percentage of women falling with the three levels of knowledge ie; below average (<50%), average (50 – 75%) and above average (> 75%).

Menopausal women 71.7% scored below average, 28.33% average and 5% above average in pretest. Where as in the post test the above average were 90% and average were only 10% and none of them scored below average.
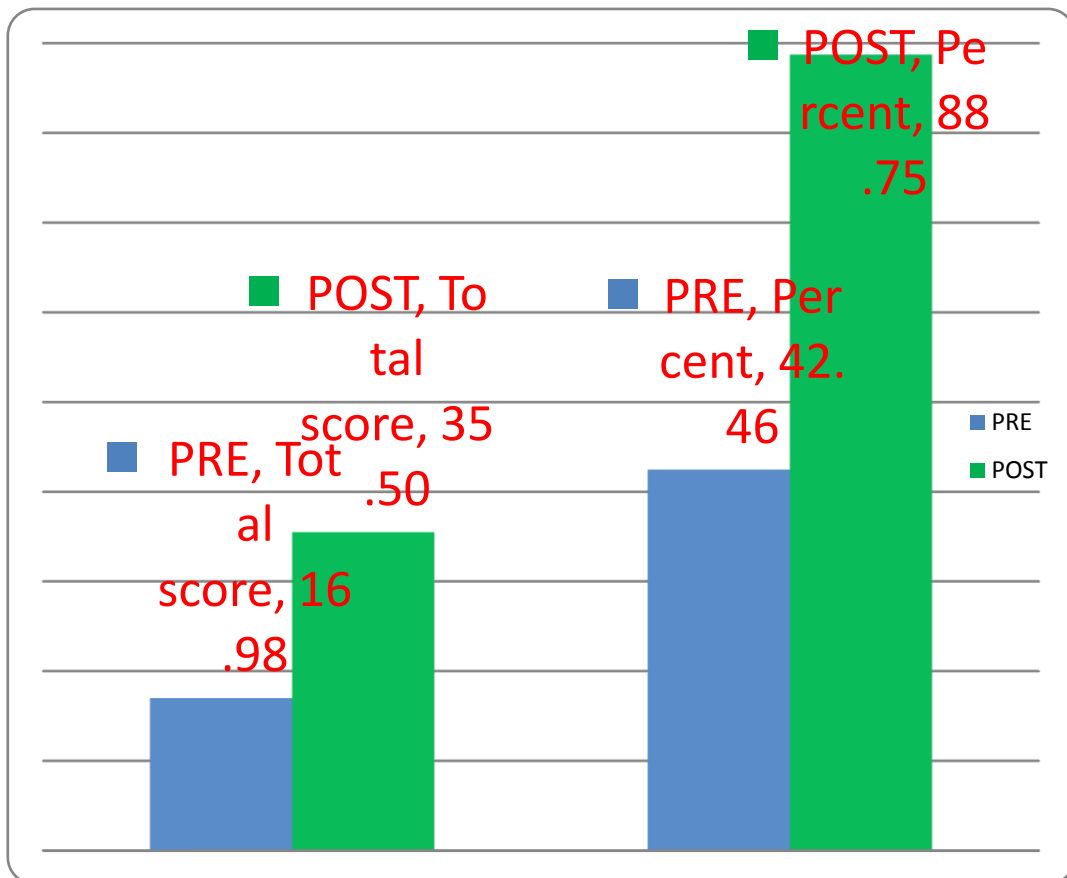
Figure: 7 3D - Clustered Column Diagram showing mean and Percentage Pre and Post Test among Menopausal Women

The above figure very clearly indicate gain in knowledge of women through informational booklet, the mean score was 16.98% and it increased to 35.5% in the post test. In terms of percentage the knowledge was 42.46% in pretest and increased to 87.75% in post test.

Part-III: significant test of knowledge
Table – 11 –'t' test for Knowledge gain in pre and post test among menopausal women

n=60

Group	Mean	S.D	St. Error	t	df	Sig
Pretest	16.9833	6.99756	.90338	18.400	59	0.00
Post Test	35.5000	3.51510	.45380			**S**

S - Significant

Hypothesis Ho_1: was there is no significant in knowledge before and after administering information booklet among menopausal women.

From the above table it is very clear that there was an increase in the knowledge by comparing mean scores that means pretest mean score was 16.98 and post test mean score was 35.5. The obtained't' value is 18.4 at df of 59 and it's significant value is 0.00 ($P < 0.01$ at 0.05 level of significance) hence null hypothesis is rejected saying that there is a significant difference in the knowledge of menopausal women before and after administration of information booklet.

PART- IV
Test of knowledge with association of demographic variables.
Table-12 Association of Age with Knowledge among Menopausal Women

n=60

TEST	Variable	Below average (<=50%)		Average (50%-75%)		Above average (>75%)		Total		X² value	df	Signific-ant
	Years	F	%	F	%	F	%	F	%			
PRE	**AGE** 40-44	22	81.5	3	11.1	2	7.4	27	100.0	5.619	6	0.467 **NS**
	45-49	12	57.1	8	38.1	1	4.8	21	100.0			
	50-54	6	75.0	2	25.0	0	.0	8	100.0			
	>54	3	75.0	1	25.0	0	.0	4	100.0			
	Total	43	71.7	14	23.3	3	5.0	60	100.0			
POST	**AGE** 40-44			3	11.1	24	88.9	27	100.0	1.931	3	0.587 **NS**
	45-49			2	9.5	19	90.5	21	100.0			
	50-54			0	.0	8	100.0	8	100.0			
	>54			1	25.0	3	75.0	4	100.0			
	Total			6	10.0	54	90.0	60	100.0			

This table indicates that as per age for knowledge x^2 = 5.619 P=0.467 (P >0.05 level) in pretest & x^2=1.931 P=0.587 (P >0.05 level) in post test. Hence there was no significant association between knowledge scores of women with regarding to age in pre and post test.
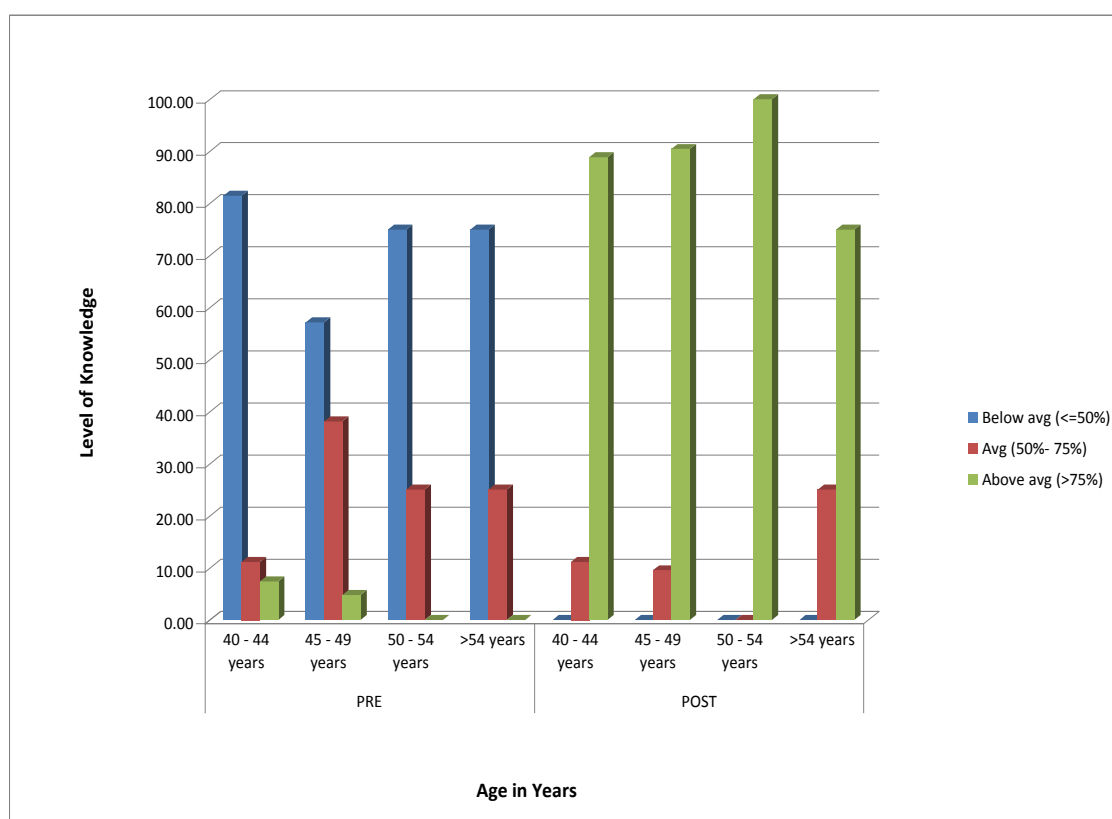
Figure: 8 The level of knowledge according to the age in pre and post test

In the pre test majority of below average performance that is 81.5% were found in the age group of 40 to 44 years, and above average is 7.4% in the same group. Between 45 to 49 years none of them have scored 57.1% in pretest where as in post test all the menopausal women 50 to 54 years of age group have scored above average and the other age groups have also scored above 75%.

**Table-13:Association of Religion with Knowledge of Women Regarding Menopausal Problems**

n=60

TEST	Variable	Knowledge level						Total		χ^2 value	df	Signifi-cant
		Below avg(<=50%)		Avg (50%-75%)		Above agv(>75%)						
		F	%	F	%	F	%	F	%			
PRE Total	**Religion** Hindu Christian Muslim	29 10 4 43	65.9 83.3 100.0 71.7	14 0 0 14	31.8 .0 .0 23.3	1 2 0 3	2.3 16.7 .0 5.0	44 12 4 60	100.0 100.0 100.0 100.0	10.092	4	0.039 S
POST Total	Hindu Christian Muslim			4 2 0 6	9.1 16.7 .0 10.0	40 10 4 54	90.9 83.3 100.0 90.0	44 12 4 60	100.0 100.0 100.0 100.0	10.77	2	0.583 NS

S = Significant   NS = Not Significant

This Chi-square values of knowledge scores of religion χ^2=10.92 p=0.039 (P < 0.05 level) in pretest and in post test χ^2=10.077 p=0.583 (P > 0.05 level) were not significant at 0.05 level. So there is no significant relation ship between knowledge scores of menopausal women regarding religion. As per religion the pretest knowledge scores are significantly differing but information booklet was very effective in improving the knowledge in all the religions and significant difference in knowledge score was not seen in posttest.
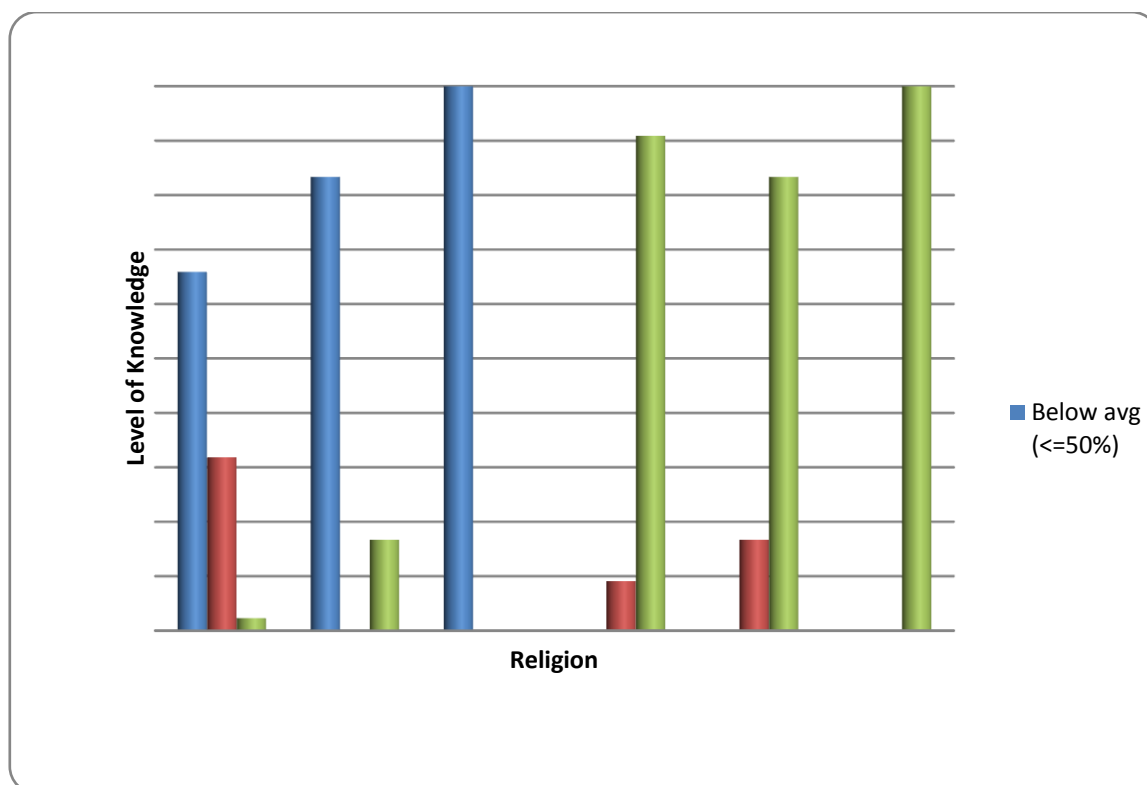
Figure: 9 The Level of Knowledge according to the Religion in pre and posttest

According to religion the below average performed group in pretest is highest among Muslims(100%) and Christians 80% and Hindus70%, where as in post test women belongs to all the three religions has scored above average (83%), none of them have scored below average. Nine percent of Hindus and 16% of Christians have scored average. All the Muslim menopausal women scored 100% in posttest

Table-14: Association of Education with Knowledge among Menopausal Women

n = 60

The chi-square values of knowledge scores of education x^2 = 2.629, p=0.622 (P < 0.05 level) in pretest and the

TEST	Variable	Knowledge level						Total		X^2 value	df	Significant
		Below avg(<=50%)		Avg (50%-75%)		Above agv(>75%)						
		F	%	F	%	F	%	F	%			
PRE Total	**Education** Intermediate Graduation Post graduation& above	9 26 8 43	69.2 72.2 72.7 71.7	4 7 3 1	30.8 19.4 27.3 23.3	0 3 0 3	.0 8..3 .0 5.0	13 36 11 60	100.0 100.0 100.0 100.0	2.629	4	.622 NS
POST Total	Intermediate Graduation Post graduation& above			1 4 1	7.7 11.1 9.1	12 32 10	92.3 88.9 909	13 36 1	100.0 100.0 100.0	.136	2	.934 NS

x^2 values in the post test were 0.136, p=0.934 (P > 0.05 level of significance) among total sample and were not significant at 0.05 level shows that no significant relationship between knowledge scores and education pre and post.

The Level Of Knowledge according to the Educational Status In Pre And Post Test
According to education , the below average performed group in pretest is highest 72.73% and 72.22% among post graduates and graduates respectively, where as in post test women have scored above average 92.31%, 90.91% and 88.89% by intermediate, post graduates and graduates respectively and none of the sample scored below average knowledge scores in post test.

Table 15:Association of Occupation with Knowledge among Menopausal Women

n=60

TEST	Variable	Knowledge level						Total		χ^2	df	Significant
		Below avg(<=50%)		Avg (50%-75%)		Above agv(>75%)						
		F	%	F	%	F	%	F	%			
PRE	**Occupation** Teachers Clerks Total	17 26 43	85.0 164.1 71.7	3 11 14	15.0 28.2 23.3	0 3 3	.0 7.7 5.0	20 40 60	100.0 100.0 100.0	3.760	4	0.439 NS
POST	Teachers Clerks Total			2 4 6	10.0 10.3 10.0	18 36 54	90.0 89.7 90.0	20 39 60	100.0 100.0 100.0	0.114	2	0.945 NS

S = Significant   NS = Not Significant
The above table depicts that in the pre test chi-square value of knowledge scores for occupation was 3.760, p =0.439(P > 0.05) and in post test the scores chi square value is 0.114, p=0.945(P > 0.05). There is no significant relationship between knowledge scores of women with occupation in pre and post test.

Table 16: Association of Income with Knowledge among Menopausal Women

n=60

TEST	Variable	Knowledge level						Total		χ^2 value	df	Signif-icant
		Below avg(<=50%)		Avg (50%-75%)		Above agv(>75%)						
		F	%	F	%	F	%	F	%			
PRE	**Income**(Rs in Thousands)											
	>10	11	73.3	3	20.0	1	6.7	15	100.0	9.110	6	0.167 NS
	10-15	20	87.0	2	8.7	1	4.3	23	100.0			
	15-20	8	61.5	4	30.8	1	7.7	13	100.0			
	20-25	4	44.4	5	55.6	0	.0	9	100.0			
Total		43	71.7	14	23.3	3	5.0	60	100.0			
POST	**Income**(Rs in Thousands)											
	>10			3	20.0	12	80.0	15	100.0	3.902	3	.272 NS
	10-15			1	4.3	22	95.7	23	100.0			
	15-20			2	15.4	11	84.6	13	100.0			
	20-25			0	.0	9	100.0	9	100.0			
Total				6	10.0	54	90.0	60	100.0			

The above table depicts that the pre test χ^2 value of income is 9.110, p=0.167 (P < 0.05 level) and in post test χ2value is 3.902, P=0.272 (P > 0.05 level). These are not significant at 0.05 levels of significance stating that, nil significant relationship exists between knowledge scores of women with income in pre and post test.

Table 17: Association of Type of Family with Knowledge among Menopausal Women

n=60

TEST	Variable	Knowledge level						Total		χ^2 value	df	Significant
		Below avg(<=50%)		Avg (50%-75%)		Above agv(>75%)						
		F	%	F	%	F	%	F	%			
PRE	**Type of Family**											
	Nuclear	19	59.4	11	34.4	2	6.3	32	100	5.56	4	0.235 NS
	Joint	19	86.4	2	9.1	1	4.5	22	100			
	Extended	5	83.3	1	16.7	0	.0	6	100			
Total		43	71.7	14	23.3	3	5.0	60	100			
POST												
	Nuclear			5	15.6	27	84.4	32	100	2.519	2	0.284 NS
	Joint			1	4.5	21	95.5	22	100			
	Extended			0	.0	6	100.	6	100			
Total				6	10.0	54	90.0	60	100			

S = Significant   NS = Not Significant

The above table shows that the pre test χ^2 value of knowledge scores of type of family is 5.560 P=0.235 (P < 0.05 level) and in post test χ^2 value is 2.5, p=0.284 (P > 0.05 level). These are not significant at 0.05 levels of significance stating that, nil significant relationship between knowledge scores of women with type of family in pre and post test.

Table 18: Association of Prior Information about Menopause with Knowledge among Menopausal Women

n = 60

TEST	Variable	Knowledge level						Total		χ^2 value	df	Signifi-cant
		Below avg(<=50%)		Avg (50%-75%)		Above agv(>75%)						
		F	%	F	%	F	%	F	%			
PRE	**Earlier received any information**											
	No	30	83.3	6	16.7	0	.0	36	100.0	7.924	2	0.019 S
	Yes	13	54.2	8	33.3	3	12.5	24	100.0			
Total		43	71.7	14	23.3	3	5.0	60	100.0			
POST	**Earlier received any information**											
	No			2	5.6	34	94.4	36	100.0	1.975	1	0.160 NS
	Yes			4	16.7	20	83.3	24	100.0			
Total				6	10.0	54	90.0	60	100.0			

The above table depicts that the pre test χ^2 value of previous information is 7.924, p=0.019 (P < 0.05 level) and in post test χ^2 value is 1.975, p=0.160 (P > 0.05 level). These values are not significant at 0.05 levels of significance stating that, the menopausal women knowledge is significantly differing in pretest for the women who have received prior information but informational booklet was very effective and all the women could able to improve their knowledge significantly in the post test.

III. Discussion

This chapter deals with discussion and interpretation of the study findings. The purpose of the study was to assess the knowledge on menopausal problems and coping strategies among menopausal women regarding basic concepts and body changes among menopausal women with menopausal problems and self management practices for menopausal problems.

The menopausal transition may take from 1 to 10 years and during that time hormone levels can be higher and lower than normal living without the protective effects of estrogen increases a women's risk for developing serious medical conditions including osteoporosis and cardiovascular disease. There are a variety of treatments available to reduce the severity of symptoms and reduce the associated risks.

The 60 menopausal women were given informational booklet for self study and knowledge was assessed before and after administration of informational booklet.

The significant findings of the study revealed the knowledge levels regarding menopausal problems among menopausal women in pretest. The majority(71.7%) had below average level of knowledge, 23.3% had average knowledge and only 5% had above average knowledge and the levels of knowledge improved in all aspects of menopause in post test and majority (90%) had above average knowledge, 10% had average and nil had below average knowledge.

The study implies that there was a significant improvement in the level of knowledge after administration of informational booklet in order to promote better Quality of life and well-being.

With respect to age majority of menopausal women 45% were aged between 40-44 years and only four subjects were above 54 years.

With regard to religion majority 73.3% were Hindus, 20% were Christians and 6.7% were Muslims.

The maximum number of 60% were graduates, 21.7% had intermediate education and 18.3% had post graduation and above.

Considering occupation 66.7% were clerks and 33.3% were teachers.

With respect to family monthly income majority 38.3% earned more than 10,000 rupees and only 15% earned more than 20,000 rupees.

Majority (53.3%) belonged to nuclear family and 10% to extended family and 36.7% belong to joint family.

Majority (63.3%) of women are still menstruating and 36.7% attained menopause.

The duration of menstruation among the women who are menstruating ie, 61.7% were menstruating regularly and 18.3% have shortened period and 10% longer periods and remaining 10% very irregular periods.

Twenty percent of the respondents had received previous information through television, 23.3% had received information from news paper, 16.7% from magazine, 13.3 % from medical personnel and 26.7% received previous information from books.

Analyzing interims of basic concepts of menopause majority 98.3% had adequate knowledge and only 1.7% had inadequate knowledge is post test when compared with pretest values to 66.7% had adequate knowledge and 33.3% had inadequate knowledge.

The level of knowledge on female hormones was only 46.7% had adequate knowledge in pretest and all 100% had adequate knowledge in post test.

With respect to body changes 91.7% were not aware of menopausal changes in pre test and 86.7% have gained adequate knowledge in post test.

Analysis of knowledge on hot flushes, 80% had inadequate knowledge in pre test and 91.7% had adequate knowledge in post test

Considering the level of knowledge regarding menopausal problems 28.3% had inadequate knowledge in pre-test and knowledge levels improved to 95% in post test.

In view of urinary problems the level of knowledge among menopausal women 73.3% had inadequate knowledge in pre-test and 96.7% had adequate knowledge in post test.

Reading menopausal risks 85% had inadequate knowledge in pretest and 86.7% had adequate knowledge in post test.

Analyzing the knowledge on management of menopausal problems, 81.7% had inadequate knowledge in pretest and 96.7% had adequate knowledge in post test.

In association with Non hormonal therapies for menopausal problems majority, 63.3% had inadequate knowledge in pretest and all 100% had adequate knowledge in post test.

Considering therapeutic measures followed in reducing stress, 48.3% mediation, 51.7% watching movies in pretest and 98.3% understood that relaxation techniques reduces the stress.

Overall knowledge levels of all aspects of knowledge revealed that in pretest the mean was 16.98 with S.D. 6.99 and in post test mean value 35.50 with S.D of 3.51.

The overall improvement mean score 88.75% shows that there is highly (p<0.001 level of significance)significant improvement in knowledge scores between pre and post test.

Menopausal Women need to know knowledge regarding concept, causes, problems, management and lifestyle modifications to reduce the severity and intensity of menopausal symptoms in their lifetime. The major role and higher responsibility places on the health care professionals to meet the needs of menopausal women. Hence the researches felt that unmet needs of women were to be considered in order to prevent health risks, menopause through systemic detection, treatment, programmes with wide spread information dissemination and provision of psychological and counseling services along with other reproductive health services.

Reviews

Bauld R, Brown RF (2009) conducted a study on "stress, psychological distress, psychosocial factors, menopause symptoms and physical health in women" among 116 women aged 45 – 55yrs at Australia and found that women with high emotional intelligence appear to hold more positive attitudes to menopause and experience less severe stress, psychological distress and menopause symptoms and better physical health and further suggested that women who expect menopause to be a negative experience are highly stressed or distressed to experience a more negative menopause.[15]

Cohen BE, Kanaya AM, Macer JL, Shen H, Chang AA, Grady D (2009) conducted a study at san Francisco reterans Affairs Medical Center, USA on "feasibility and acceptability of restorative yoga for treatment of hot flushes" and found that it is feasible to teach restorative yoga to middle-aged women without prior yoga experience. The high rates of subject retention and satisfaction suggested that yoga is an acceptable intervention and further indicated the efficacy of restorative yoga for treatment of menopausal symptoms would be safe and feasible. The Majority of the subjects 75% were satisfied with the study and continued to practice yoga after the study. Mean number of hot flushes per week decreased by 30.8% and mean hot flush score decreased 34.2% from baseline to week 8. No adverse events were observed.[16]

Chung H,Chen (2007) conducted a comparative study of menopausal Hot flushes and their Psycho social factors among 222 women between the ages of 45 and 60 at Kaohsiung City, Taiwan and Seattle City, USA by means of convenience sample and found that marriage status, living arrangement, education, employment status, age and number of children achieved significant differences between two groups. American women reported higher severity of hot flush than Taiwanese women.

American women reported more depressed, trait anger and positive attitude toward aging, hot flushes, night sweats, feeling tired and Taiwanese women reported hot flushes, neck pain and feeling tired and suggested coping strategies were" fan myself or open a window or turn on air conditioner, remove some items of clothing and " relax " for both groups. With comprehensive measures of hot flushes and their psychosocial factors, results of study can contribute to knowledge development on variability in hot flushes experienced during menopausal transition and its relationship with social an cultural contexts.[21]

Bhatt RV, Golani S, Jani M (2007) conducted a study among 410 women at Amin general Hospital, Baroda regarding psychosocial problems around menopause and identified that anxiety, depression, loss of confidence, loss of memory was 42% in urban women, and 34% in rural women, reduced secural interest was 52% in urban women and 41% in rural women. Psychological problems are not uniform in every woman.

Some woman consider menopause as the time or sexual freedom because of freedom from menses, bleeding, interruptions by small children, pregnancy and in contrast some women consider menopause as loss of youth, loss of feminine looks and loss of child bearing capacity. The health care providers must realize that psychosocial problems are on the increase because of modern life style, increasing stress, social and economic pressures. To day women expect to maintain quality of life for decades beyond the point where women lose their natural reproductive capabilities.[22]

Strick OL, Ginger JN(2007) Conducted a study on "the relationship among stress, coping, social support and weight class in premenopausal African American women at risk for coronary heart disease" among 236 subjects USA, the measures for stress, coping and social support included the perceived stress scale, Norbeck social support questionnaire and the Jalowiec coping scale. The weight class of the women was determined as: normal weight – body mass index (BMI) of 18.5 – 24.9 Kg/m, over weight – BMI of 25-29.96 Kg/m, or obese –

BMI > or = 30 Kg/m statistical analysis conducted included spearman's rho, chi-square and regression analysis confrontive coping was shown to be used more often to a "high" degree in normal-weight African American women than in overweight and obese African American Women (chi = 24.024 : P = 0.0001). Confrontive coping was the only independent predictor of weight class in a regression model that included perceived stress, life events, social support, and optimistic, self – reliant and evasive coping strategies.[23]

Farquhar C, Marjoribanks J, Lethaby A, Suckling JA, Lamberts Q(2005), conducted a study on "Long term hormone therepy for perimenopausal and post menopausal women" among 41,904 women at Anckland, Newzealand and found that combined continuous Hotmone thereby significantly increased the risk of various thrombo – embolism after 1 yr use, stroke, breast cancer, gallbladder disease dementia after three years use. And with long-term Destrogen – only height significantly increased the risk of various thrombo – embolism, stroke, gall bladder disease after three to seven years use but did not increase the risk of breast cancer and decreased incidence of fractures and color cancer. Hormone thereby is not indicated for the routine management of chronic disease and short-term use appeass to be relatively safe for healthy younger women. [25]

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