A Descriptive Study to Assess the Knowledge and Expressed Practices Regarding Prevention of Osteoporosis Among Women in Selected Communities, Ambala, (Haryana).

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Abstract— Osteoporosis is a global public health problem currently affecting more than 200 million people worldwide. In the United States alone, 10 million people have osteoporosis, and 18 million more are at risk of developing the disease, which can lead to fractures and other complications. The Objectives of study were to assess the level of knowledge and level of expressed practices regarding the prevention of osteoporosis among women with selected demographic variables. To find out the relationship between knowledge score and expressed practice related to prevention of osteoporosis among women with selected demographic associations. To determine the association between level of knowledge and level of expressed practices related to prevention of osteoporosis among women with selected demographic variables. The Research approach adopted for the study was quantitative and design was descriptive survey research. The study was conducted in selected districts of Haryana. A total number of 300 women were selected by using convenience sampling technique. The tool used for data collection, consisted of demographic variables, structured knowledge questionnaire and expressed practices checklist to measure knowledge and expressed practices of women. The reliability of tool was calculated by kuder -Richardson .data was analyzed by spss version 20. The Study result revealed that more than half (58.3%) of the women were had moderate knowledge regarding osteoporosis among women. Less than half (44.7%) of women had following poor expressed practices regarding the prevention of osteoporosis. A highly significant correlation between knowledge and expressed practices. There was a highly significant association of knowledge with all the demographic variables. Study concluded that women had moderate knowledge and had followed poor practices towards prevention of osteoporosis among women.

Indexed Terms- knowledge and expressed practices.

I. INTRODUCTION

Women are a gift of GOD, osteoporosis affects more women than men of the estimated 10 million Americans with osteoporosis, more than 8 million (80%) are women. women are more likely get osteoporosis because, women usually have smaller thinner, less density of bones than men. White and Asian women, aged 50 and over while men and women of all races can develop osteoporosis ,post menopausal women are at highest risk. Osteoporosis is a condition characterized by a decrease in the density of bone decreasing its strength and resulting in fragile bones Osteoporosis literally leads to abnormally porous bone that compressible, like a sponge and the stage there is a high risk of osteoporosis .The researcher came across many women who were having a risk of osteoporosis .The researcher therefore, felt the need to conduct this kind of study to assess the level of knowledge of women regarding prevention of osteoporosis[1] Menopause can increase a woman's risk of developing osteoporosis. The drop in estrogen levels that occurs around the time of menopause results in increased bone loss. It is estimated that the average woman loses up to 10 percent of her bone mass in the first five years after menopause. If a woman's peak bone mass before menopause is less than ideal, any bone loss that occurs during menopause may result in osteoporosis [21] Osteoporosis can be defined as a systematic continuous progressive skeletal disease that results in low bone mass, and deterioration of the small structures of the bones, which makes the bones fragile and more prone to fractures.[2]

Osteoporosis is a global public health problem currently affecting more than 200 million people

worldwide. In the United States alone, 10 million people have osteoporosis, and 18 million more are at risk of developing the disease, which can lead to fractures and other complications. Osteoporosis is a major risk factor for fractures of the hip, vertebrae, and distal forearm. Hip fracture is the most detrimental fracture, being associated with 20% mortality and 50% permanent loss of function.[3]

Osteoporosis is known as the silent disease as it is often not diagnosed until an individual presents with a low impact fracture. Early osteoporosis is not usually diagnosed and remains asymptomatic. Loss of bone density occurs with advancing age and rates of fracture increase markedly with age, giving rise to significant morbidity and some mortality [4]. Osteoporosis is a global public health problem currently affecting more than 200 million people worldwide. In the United States alone, 10 million people have osteoporosis, and 18 million more are at risk of developing the disease, which can lead to fractures and other complications. [5] As a result, many osteoporosis studies have been focused on this aspect. A study conducted on the assessment of knowledge, attitude and behavior regarding osteoporosis in Iran found that 15 to 30% of participants didn't know what osteoporosis is [6]. Another study assessed patients' knowledge of osteoporosis showed that only 31.2% of participants had very good knowledge towards osteoporosis, moreover low proportion of the participants (17.4%) were able to identify that thin woman are at greater risk of osteoporosis [6] Similar response was observed in Indian study among fifty premenopausal women and fifty postmenopausal women, where the study participants scored average level of knowledge about osteoporosis [7]. Another study among female adolescents aged 15–18 years in one secondary school in Egypt, reported the lack of awareness about the concept of osteoporosis [8]. With the increased prevalence of osteoporosis in Gulf countries, it has been important to assess the osteoporosis knowledge, attitude and practice among the university students to discover the areas where students had gaps or insufficient information about the disease and health related practices, and implement an in-depth osteoporosis education during early college years. Thus, this study aimed to assess the knowledge, attitude and practice of osteoporosis among university students, and identify the set of key demographic and socio-economic factors that jointly influence the Knowledge attitude practices of osteoporosis.

Osteoporosis is a preventable disease. Through appropriate education and lifestyle changes, the incidence of osteoporosis can be reduced. It is important that women should have knowledge regarding risk factors for osteoporosis and preventive health behavior. Researcher strongly felt that since the youth are at risk and unaware about this silent killer, imparting knowledge at a younger age can prevent osteoporosis to certain extent. The need for prevention of this silent killer is must, at this has become the major life

II. METHODOLOGY

- Research approach: quantitative.
- Research design: descriptive design
- Variables of study: Demographical variable are age, education, type of employment, type of family, family income, type of diet, history of osteoporosis, menstrual history, any medical history and source of knowledge.
- Setting of the study: This study was conducted in settings community setting of Ambala, Haryana
- Population: In present study women of Haryana
- Target Population: In this study the target population was women who were living in selected community setting of Ambala, Haryana.
- Accessible Population: In this study the accessible population was women who were available during data collection in community setting of Mullana, Suhana, Barara, Adhoya, Budiyon of Ambala, and Haryana.
- Inclusion Criteria: Women who were willing to participate and available at the time of data collection.
- Exclusion Criteria: Women who were not given full response at the time of data collection.
- Sample size: The sample for the study comprise of 300 women residing in selected community area of Ambala, Haryana.
- Sampling technique: convenience sampling technique was used.

DATA COLLECTION TOOL AND TECHNIQUES

SR.NO	TOOLS	TECHNIQUE
I.	Sample characteristics	Interview technique (Paper and pencil technique)
II.	Self structured knowledge questionnaires	Interview technique (Paper and pencil technique)
III.	Expressed practices checklist	Interview technique (Paper and pencil technique)

CONTENT VALIDITY OF TOOL: content validity was done by 7 experts: 3 from medical surgical nursing department, 2 from Community health nursing department, Iwas HOD of orthopedic department, 1 was Nursing Superintendent.

TRY OUT OF THE TOOL: Pre-testing of the tool was done by administered the tool on 7 women in Dosarka village, Ambala, Haryana. The subject chosen were similar in characteristics to those of the population. It was found that it took 20-30 min for interviewing each participant to complete the structured knowledge questionnaire and expressed practice checklist. The item was found to be clear and understandable. Interview technique was used and found to be useful for women and for their easy understanding because the population was giving freely answer during the interview.

RELIABILITY OF THE TOOL: The reliability coefficient for the knowledge questionnaire was calculated by using Kuder Richardson and it was found to be 0.70 and expressed practices checklist was calculated by Kuder Richardson and it was found to be 0.89.

PILOT STUDY: A total of 30 women were selected for the study by convenient sampling technique. Formal permission obtained from sarpanch and Self Introduction and Introduction about the study was given to women. Written informed consent was obtained from women regarding their willingness to participate in the study to obtain free and frank response Data was collected in the month of March 2022.

PROCEDURE OF FINAL DATA COLLECTION

Data collection is the gathering of the information to address research problem. The most important and crucial step for any investigation is the collection of appropriate information which provides necessary data for the study. The formal procedure researcher develops to guide the collection of the data in a standardized form.

The data collection was carried out during month of April 2022 after taking formal permission from the sarpanch of Adhoya, Mullana, Barara, Suhana, Budiyon.

By using convience sampling technique total 300 samples were selected as a sample for present study.

- Self-introduction was given to community members. Rapport was developed with them.
- Nature and purpose of the study were explained to community people.
- Informed written consent was taken from the women for participation in the study.
- The sample was taken from the mothers residing in community villages of Haryana with research variables of knowledge and expressed practices of women regarding prevention of osteoporosis.

Data analysis was a systemic organization and synthesis of the data and test in of the hypotheses using those data. The purpose of the data analysis was to translate the information collected during the course of the data collection into an interpretable form and to test the proposed relations of research problem.

The data of the present study has been planned to be analyses based on specific objectives. The data obtained from 300 samples would be analyzed by using descriptive statistics as:

1. Demographic data would be analyzed by using descriptive statistics such as frequency and percentage.
2. Findings related to Frequency and Percentage distribution and chi test to assess the knowledge and expressed practices of women regarding

prevention of osteoporosis of selected community of Haryana.

IV. DATA ANALYSIS

Data was analysed using SPSS 24.0 version statistical software. Descriptive statistics (mean, standard deviation, frequencies and percentages) was used to describe the quantitative and categorical variables. Bivariate statistical analysis was carried out using appropriate (Chi-square) statistical tests, based on the type of study and outcome variables. A *P* value of < 0.05 and 95% was used to report the statistical significance and precision of results.

V. RESULT

Women were distributed according to age, education, employment, family, income, diet, and history of osteoporosis, history of menstrual cycle, medical history, and source of knowledge regarding osteoporosis. Data shows that 41.7% were in age group of 30-40years, 31.0% were in age group of 41-50years, 27.3% were in age group of 51-60 years of age group. Among the whole population 13.3% women were educate, 19.7% were non-literate, 38.3% of women have primary education,28.7% have secondary education. Among the whole population 92.0% women were homemaker, 3.0% were self-employed, 3.7% were private employee, 1.3% were government job. 43.7% women belong to joint family, 54.7% belong to nuclear family, 1.7% women belong to extended family. 9.3% have less than 5000 family income, 49.7% have between 5000-10000 family income, 33.3% have between 10000-15000 family income, 7.7% have more than 15000 family income. Among women 83.0% were vegetarian, 7.7% women were non-vegetarian, 9.3% women have mixed diet. Among women 11.3% has history of osteoporosis and 88.7% has no history of osteoporosis. Among women 56.7% have regular history of menstrual cycle, 9.3% women have irregular history of menstrual cycle, and 28.7% women were menopause. Among women 8.7% has medical history, and 91.3% women has no medical history. 9.0% women follows the source of information regarding prevention of osteoporosis by newspaper,53.7% follows the source of information regarding prevention of osteoporosis by television, 2.0% follows the source of information regarding prevention of osteoporosis by magazines, 35.3% follows other sources of information.

Table-2 Frequency and percentage distribution of level of knowledge regarding prevention of osteoporosis

Sr. No	Level of Knowledge	f	%
1.	Adequate knowledge	64	20
2.	Moderate knowledge	175	58
3.	Inadequate knowledge	61	20

Maximum value: 22
Minimum values: 0

Table 2 shows the frequency and percentage distribution in terms of structured knowledge scores depicts that women have adequate knowledge 21%, moderate knowledge58%, inadequate knowledge 20%.

Table -3 Frequency and percentage distribution of expressed practices scores regarding prevention of osteoporosis

Sr. No	Level of expressed practices	f	(%)
1.	Good	70	24
2.	Average	96	32
3.	Poor	134	44

Maximum value: 13
Minimums value: 0

Table-3 shows the frequency and percentage distribution in terms of expressed practice scores. The data reveals that 24% have good expressed practices 32% have average expressed practices and 44% have poor expressed practices.

Table: 4 Analysis of expressed practices regarding prevention of osteoporosis among women
N=300

Sr.No.	Items for expressed practices	Yes/No	f	%
	Do you ……			
1	have exercise habits	Yes	173	57.7%
	If yes then specify……..	a)Walking	87	29%
		b)Yoga	40	13.3%
		c)Exercise	46	15.3%
		No	127	42.3%
2	put effort that required in exercise	Yes	160	46.7%
		No	140	53.3%
3	maintain a regular exercise practices	Yes	142	47.3%
	if yes, then specify when do you exercise	a)Morning	98	33%
		b)Evening	44	14.3%
		No	158	52.7%
4	exercise for the appropriate length of time if yes,	Yes	14640	48.7%
	then specify for how much time:	1hr	33	13.4%
		2hr.	73	11%
		30 min	154	24.3%
		No		51.3%
5	exercises even if they are tiring	Yes	49	16.3%
		No	251	86.7%
6	Exercise at least three times a week	Yes	174	58.0%
		No	126	42.0%
7	eat calcium-rich foods	Yes	252	84.0%
	If yes, then specify:-…….	Milk	249	83%
		(b) Eggs	51	17%
		No	48	16.0%
8	consume adequate amounts of calcium-rich	Yes	252	99.3%
	foods	(a)500-1500ml	280	93.3%
	if yes, then specify how much:-……	(b)1500-2000ml		
		No	18	6%
			2	0.7%
9	take calcium supplements	Yes (a)Calcium	52	17.3%
	if yes, then specify:-…….	tablets		
		No	248	82.7%
10	go for routine checkup for calcium test.	Yes	16	5.3%
		No	284	94.7%
11	take vitamin D supplements	Yes a)Vit.D	17	5.7%
	if yes, then specify:-…	tablets	3	1%
		b)Multivitamin		
		No	13	4.7%
			283	94.3%

12	take exposure to sunlight if yes then specify:……	Yes Morning Evening	300 100 200	100.0% 33.3% 66.6%

Table.4.6 represents that more than half (57.7%) women have exercise habits while less than half (42.3%) have not exercise habits in which 29% women do walking, 13.3% women do yoga, and 15.3% do exercise. In second question, 46.7% put efforts that required in exercise and 53.3% do not put any efforts. In third question, 47.3% have regular exercise practices. In morning 33% women do exercise 14.3% do exercise in evening and 52.7% were not doing any exercises. In fourth question, 48.7% do exercises for appropriate time of length in which 13.4% for one hour, 11% for two hour, 24.3% for thirty minutes 51.3% do not do exercises for appropriate time of length. Less than half (16.3%) of women were doing exercises even if they were tired while maximum women (86.7%) were not doing exercises if they were tired. More than half of women (58%) doing exercise at least three times a week while less than half of women (42%) were doing exercise less than three times a week. More than half of women (84%) were taking calcium rich food in their diets in which maximum women (83%) were taking milk, and 17% take eggs and minimum women (16%) were not taking calcium rich food in their diet. Maximum 99.3% consume adequate amount of calcium rich foods in which 93.3% take 500-1500ml amount and 6% take 1500-2000ml amount and .Minimum 7% do not consume adequate amount of calcium rich food. 17.3% of women take calcium supplements while 82.75 do not take calcium supplements. 5.3% women go for routine check up for calcium test while 94.7% don't go for routine check up for calcium test. 1% of women take vitamin D tablets 4.7% take multivitamins. 100% women were taking sunlight exposure more than half 66.6%) were in morning and less than (33.3) half were in evening .

- Relationship between the knowledge and expressed practices regarding prevention of osteoporosis among women

Mean and standard deviation of correlation between knowledge score and expressed practice score regarding prevention of osteoporosis is 14.00 ± 3.151 and 6.93 ± 2.720 respectively.

VI. DISCUSSION

In the present study majority of the women were taking calcium rich diet which similar to the study results conducted by Emaan farhan, palavi rani, which indicates that majority of the women were taking calcium rich diet

In the present study majority of the participants had (21.3%) having adequate score on knowledge test, while 20.3% had inadequate knowledge score and majority were from age group of 30-60.These findings are similar to the findings of the study conducted by Risni Ediriweera de silva, Muhamed Ruvaiz Haniffa, which is also indicate that majority were from the age group of 40-60 years.

In the present study majority of the participants (38.35) were belongs to primary qualification and majority (92%) were homemaker. These findings are similar to the study conducted by Kavinda Dimuthu kumara Gunathilaka which indicates that majority of the participants were having primary qualification.

In the present study maximum of the participant (41%) having good expressed practices these findings are similar to the findings of the study conducted by Inoshi Atukorala

CONCLUSION

Majority of women have moderate level of knowledge regarding prevention of osteoporosis; maximum women have poor level of expressed practices regarding prevention of osteoporosis. There was a highly significant correlation between knowledge and expressed practices regarding prevention of

osteoporosis and there was association between level of knowledge and demographical variable like family income, education status, age and menstrual history.

IMPLICATIONS

The result of study proved that there is a necessity of giving education on prevention of osteoporosis in order to improve the knowledge and expressed practices of women. Hence it becomes the responsibility of the health personnel to create the awareness about prevention of osteoporosis by providing full information and advices regarding exercises and diet. The findings of the present study had several implications in the field of nursing practices, obstetrics and gynaecological nursing, community health nursing, nursing education, nursing administration, nursing research, mass media.

NURSING PRACTICES

- Validated forms for assessing the risk for osteoporosis can be incorporated into nursing care as a routine or early detection measure.
- Nurses can organize the community educational programs employing different media to play an important role in enhancing osteoporosis awareness.
- Nurses can organize guidance and counselling programme for a regular screening of osteoporosis in regular intervals.

NURSING EDUCATION

- Nurse educator can arrange regular continuing education program for all the health care personnel to update the knowledge.
- Nurse educator can encourage the health care personnel to attend various national health conference, workshops, and campaigns to elaborate the knowledge regarding the prevention of osteoporosis.
- Awareness regarding prevention of osteoporosis its about exercise and diet should be acknowledged for nursing students which would be a great help for promoting themselves as well as other who are in need.
- Nursing education emphasis on preparing prospective nurse to impact health education by using various methods of education technology and also the health care delivery system at present is giving more emphases on preventive rather than curative aspects.
- In service education programmes should be conducted for nurses practitioners to update their knowledge regarding prevention of osteoporosis. Providing learning experiences to the trainee of nursing is also necessary.

NURSING ADMINISTRATION

- Nurse Manager can develop and disseminate quality improvement programs to improve initiation of secondary preventive measures of osteoporosis.
- Nurse administrator can plan and organize continuing nursing education programme to educate the nursing officers regarding measures to improve knowledge on prevention of osteoporosis risk factors
- Nurse administrator can encourage the nurses to conduct research studies on various aspects of osteoporosis risk, knowledge and attitude of health care personnel towards early detection and prevention of osteoporosis.

NURSING RESEARCH

In our country lack of knowledge regarding the osteoporosis. So, it is essential to identify the present level of knowledge and expressed practices of women regarding prevention of osteoporosis to know the extent of information necessary to be taught and there is need for an extended nursing research on prevention of osteoporosis since the present study supported by many other studies reveal poor knowledge, practice and attitude of women towards prevention of osteoporosis, further studies can be conducted to explore the prevention / strategies by which their knowledge, practices as well as attitude can be improved/ enhanced.

LIMITATIONS

- The study was limited to area of selected communities of Ambala (Haryana). Hence it was difficult to make broad generalization of the findings.
- The study was limited to only women age group of between 30-60 years.

RECOMMONDATIONS

- A comparative study can be done to assess and prevalence, knowledge and expressed practices regarding prevention of osteoporosis..
- A study can be conducted to compare the knowledge and attitude of female urban and rural health care personnel regarding early detection and prevention of osteoporosis.
- A study can be replicated on a large sample of women from selected rural and urban area of Haryana for wider generalized of the things.
- A study can be conducted to assess knowledge and attitude of patients towards life style modification for prevention of osteoporosis

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