



# Descriptive Study : to recognize the clinical parameters of postmenopausal osteoporosis.

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## ABSTRACT

**Background:** Menopausal period is the period where women's life goes into tremendous emotional as well as many physiological changes. One of the big change is her bone mass that is bone mineral density. In menopausal women the bone mineral density level is reduces due to deficiency of estrogen level , so the mobility became harder for them & the chances of postmenopausal osteoporosis is increases with the faulty bone development which increases the risk of fractures of forearm , vertebrae's ,hip & spine.

**Objectives:** The study objectives were (1) To assess the clinical parameters among the menopausal women attending orthopaedic OPD of selected hospitals in Mumbai.. (2) To find out the association between demographic variables with selected clinical parameters among the menopausal women attending orthopaedic OPD of selected hospitals in Mumbai.

**Methodology:** The research method adopted for the present study is the quantitative approach. The researcher adopted the descriptive exploratory research design among menopausal women attending orthopaedic OPD of selected corporation hospitals in Mumbai .Researcher used non-probability purposive sampling technique where researcher has taken 150 menopausal women as a samples. Data collected by measuring samples clinical parameters. Participant's responses was calculated and expressed as frequency and percentage. Selected clinical parameters was calculated and expressed as frequency and percentage. Association between demographic variables with selected clinical parameters analyzed by using chi-square.

**Results:** The results showed that in assessment of selected clinical parameters among the menopausal women in according to height that 43.33% women had height between 160 cm to 165 cm , according to weight 50.66% women had weight between 51-56 kg, according to BMI that 84% women had BMI 18.5-24.9 & according to BMD that 83.33% women had between -2.5 & below. The finding reveals that the calculation of chi-square value of marital status (7.28).Hence chi square values were more than the table values at the level of 0.05, hence it is interpreted that the marital status has significant association with the clinical parameter of BMD level of menopausal women. The other calculations of age, education, occupation, socioeconomic status, dietary pattern did not demonstrate the association between the BMD levels of the menopausal women. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted that the BMD level and chosen demographic variables are significantly associated.

**Keywords:** Clinical Parameters , Postmenopausal Osteoporosis.

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## INTRODUCTION

Bone is a zestful tissue comprised of cellular, organic and inorganic constituents with a compound internal structure[1]. In osteoporosis, a disorder that affects BMD, the rapid loss of bone mass after menopause is known as postmenopausal osteoporosis. Due to estrogen deprivation, postmenopausal osteoporosis is characterized by the activation of osteoclasts. Ageing causes more postmenopausal women to get osteoporosis. One osteoporosis fracture every three seconds[2]. Osteoporosis develops when bone resorption exceeds bone production, increasing the risk of weak bones and fractures. Osteoporosis is a dangerous non-communicable disease that affects 1.5% of Europeans[1]. Osteoporosis is defined by a bone loss strength and quality, resulting in diminished bone strength and an increased risk of non-traumatic fractures. Osteoporosis is a chronic bone condition characterized by bone density and quality decrease. It mostly concerns women. The WHO's operational definition of osteoporosis is a BMD 2.5 SD or less underneath the mean result for young normal women in postmenopausal women and men aged 50 years. For a long period, hip DEXA scans were utilized to diagnose this illness. Later, DEXA measurements of the lumbar spine were included[3].

## METHODOLOGY

Study was conducted in corporation hospitals of Mumbai. The study approach was quantitative approach. Researcher selected descriptive exploratory research study design. Population of the study was women who attained the

menopause with the age group of 55 years & above, coming to the orthopaedic OPD of selected corporation hospitals in Mumbai with having BMD level of below -2.5. Sampling technique used by researcher was non-probability purposive sampling technique. The total sample size for this study was 150 menopausal women. Data collected by measuring clinical parameters of samples that is height, weight, BMI & BMD T-score level. Participant's responses were calculated and expressed as frequency and percentage. Selected clinical parameters were calculated and expressed as frequency and percentage. Association between demographic variables with selected clinical parameters was analyzed and interpreted by using chi-square at 0.05 level.

## RESULTS

The data were entered into a master sheet for tabulation and statistical processing the obtained data were analyzed, organized, and presented under the following headings:

**Section I:** Frequency and percentage distribution of socio-demographic variables among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

**Section II:** Assessment of selected clinical parameters among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

**Section III:** Association of selected clinical parameters with demographic variables among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

### Section I: Frequency and percentage distribution of socio-demographic variables among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

Table No 1: Frequency and percentage distribution of socio-demographic variables among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

Demographic Variables		Number of menopausal women	Percentage
Characteristics		Frequency (f)	%
Age (Years)	45-49 years	34	22.66



	50-54 years	70	46.66
	55 years & above	46	30.66
Education	Illiterate	01	0.66
	Primary education	36	24
	Secondary Education	113	75.33
	College	00	0.00
Occupation	Labour	24	16
	Office	25	16.66
	Housewife	101	67.33
	Retired	00	00.00
Socioeconomic status	Low income (Less than 5,000)	19	12.66
	Lower middle income (6000 to 10,000)	98	65.33
	Middle income (11,000 to 20,000)	33	22
	High income (21,000 & above)	00	00
Dietary Pattern	Vegetarian diet	36	24
	Non-Vegetarian diet	21	14
	Mixed diet	96	64
Marital Status	Married	138	92
	Unmarried	00	00.00
	Widow	12	08

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Table No 1 depicts that, majority of 46.66% having 50-54 years of age group and 22.66% belongs to 45-49 years of age group. As shown in table no 1, that majority of 75.33% respondent completed secondary education and 0.66% were illiterate. As shown in table no 1, that majority of 67% women are housewife and 16% were labor. As shown in table no 1,

that majority of 65.33% belongs to lower middle-class group and 12.66% belongs to low income. As shown in table no 1, that majority of 64% respondent took mixed type of diet and 14% took non-vegetarian diet. As shown in table no 1, that majority of 92% respondent were married and 8% respondents were widow.

## Section II: Assessment of selected clinical parameters among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

Table No 2: Frequency and percentage distribution of selected clinical parameters among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.

Clinical Parameters		Number of menopausal women	Percentage
Characteristics		Frequency( <i>f</i> )	%
Height	≥ 151 cm	10	6.66
	152cm to 155cm	27	18

N= 150



	156cm to 159cm	46	30.66
	160cm to 165 cm	65	43.33
	165cm & above	02	1.33
Weight	50kg & below	03	02
	51-56 kg	76	50.66
	57-62 kg	58	38.66
	63 kg & above	13	8.66
BMI	Below 18.5	00	00.00
	18.5-24.9	126	84
	25.0-29.9	21	14
	30.0 & above	03	2

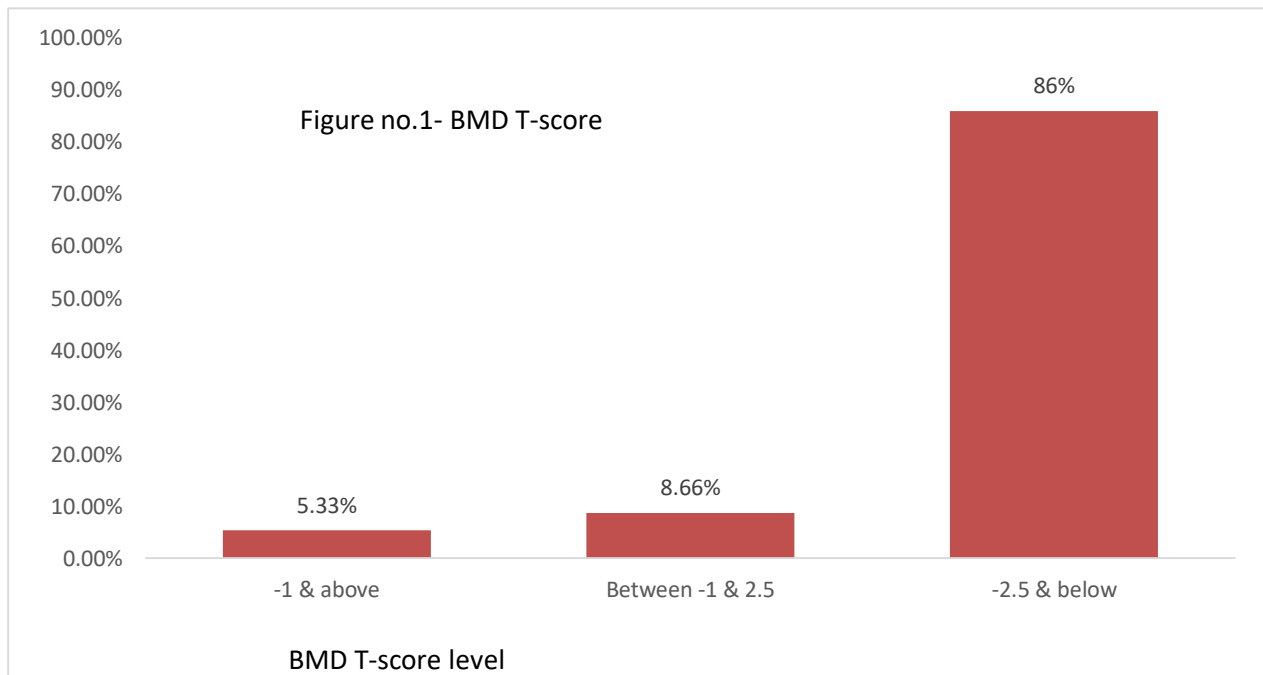
Table no.2 depicts that majority of 43.33% respondents had height between 160 cm to 165 cm and 1.33% had height 165 cm and above. As shown in table no. 2 , that the majority of 50.66% respondents had weight between 51-56 kg and 2% had 50kg and below. Table no. 2 depicts that the majority of 84% respondents had BMI 18.5-24.9 and 2% had between 30.0 and above.

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**Figure no.1-Distribution of menopausal women according to BMD level T-score in terms of frequency percentage.**

**N=150**

Figure no.1 shown that the majority of menopausal women had BMD T-score level between -2.5 & below and very few had between -1 and above.



**Section III: Association of selected clinical parameters with demographic variables among menopausal women attending orthopedic OPD of o selected hospitals in Mumbai.**

Table no.3. Association of selected clinical parameters with demographic variables among menopausal women attending orthopedic OPD of selected hospitals in Mumbai.



N= 150

Demographic variables	No of samples	BMD level			DF	P value	$\chi^2$ value	Result
		A	B	C				
<b>Age in years</b>					4	0.991	0.286	NS
45-49 years	34	2	3	29				
50-54 years	70	5	7	58				
55 years & above	46	4	4	39				
<b>Educational Status</b>					4	0.504	3.33	NS
Illiterate	1	0	0	11				
Primary ed.	36	3	6	27				
Secondary ed.	113	8	8	97				
College	00	00	00	00				
<b>Occupational Status</b>					4	0.444	3.73	NS
Labour worker	24	2	3	19				
Office worker	25	3	4	18				
Housewife	101	6	7	88				
Retired	00	00	00	00				
<b>Socioeconomic status</b>					4	0.143	6.87	NS
Low income	19	3	3	13				
Lower middle income	98	5	6	87				
Middle income	33	3	5	25				
High income	00	00	00	00				

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Demographic variables	No of samples	BMD level			DF	P value	$\chi^2$ value	Result
		A	B	C				
<b>Dietary Pattern</b>					4	0.577	2.88	NS
Vegetarian diet	36	3	5	28				
Non-vegetarian diet	21	2	3	16				
Mixed diet	93	6	6	81				
<b>Marital status</b>					2	0.026	7.28	S
Married	138	8	12	118				
Unmarried	00	00	00	00				
Widow	12	3	2	7				

Table No 3 depicts that the calculation of chi-square value there has been significant association between marital status (7.28), chi square values were more than the table values at the level of 0.05, hence it is interpreted as these demographic variables has a significant association with the BMD level among menopausal women and age in years (0.286), educational status (3.33), occupation status (3.73), socioeconomic status (6.87) & dietary pattern (2.88) the chi square values less

than the table values at the level of 0.05 did not demonstrate the association between the BMD level among menopausal women. Therefore, the null hypothesis is rejected and the alternative hypothesis accepted.

### DISCUSSION

The majority of 86% respondents had BMD T-score between -2.5 & below and 5.33% had between -1 and above. Similar study conducted by Yousef Al-Saleh, et al (2015), in Saudi Arabia



presented guidelines for medical practitioners dealing with osteoporosis. A panel of 14 local osteoporosis specialists met to discuss treatment options based on data and expert views & they interpreted that BMD is still determined via DXA scanning, or dual x-ray BMD measurements should be taken 1–2 years after the intervention starts, and bone turnover biomarkers should be investigated whenever possible. Every Saudi woman over 60 must have DXA BMD measurements. The FRAX USA (white) version should be used to make therapy choices[4]. A cross-sectional study conducted by Chiplonkar SA, et al(2018), he compared the bone health of seemingly healthy males, premenopausal women, and menopausal women. 421 seemingly healthy Indians (women = 228) were interviewed between 40 and 75. The ultimate outcome was: The study's participants were aged 53.3 8.4 on average. The average age at menopause was 49.2 3.5 years for 44.3 % of the women. Men's BMD reduced steadily until age 50, whereas women's BMD deteriorated rapidly. As a result menopause causes a fast decrease in BMD in women. As a result, both Indian men and menopausal women need to take necessary precautions to avoid osteoporosis in their later years. Eventually through this research it indicated that there was significant association between demographic variables with selected clinical parameters specially BMD level in menopausal women[5].

## CONCLUSION

In accordance with the results of this study, it is necessary for menopausal women to measure their BMD level for early identification & prevention of postmenopausal osteoporosis. During menopausal period due to deficiency of estrogen hormone women's bone mass is reduces so there is need to assess their BMD T-score & based on that for strengthening the bone mass women have to perform physical activities rather than to adopt sedentary lifestyle. Early assessment of BMD level can reduces the chances of fracture ,immobility &

help to improves the quality of life of menopausal women.

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## Conflicts of interest

There are no conflicts of Interest.

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