

# Menopause and its symptoms....A way of life; not the end of life.

A cross-sectional study among peri-menopausal women in Vadodara, Gujarat, India



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## Why focus on peri-menopausal women?

- 'The change', 'the climacteric', 'the midlife crisis' is an important event in a woman's life
- Depleting oestrogen levels : increased risk of osteoporosis in women, along with several other symptoms
- Calcium and Vitamin D levels used as proxy indicators for Bone Mineral Density

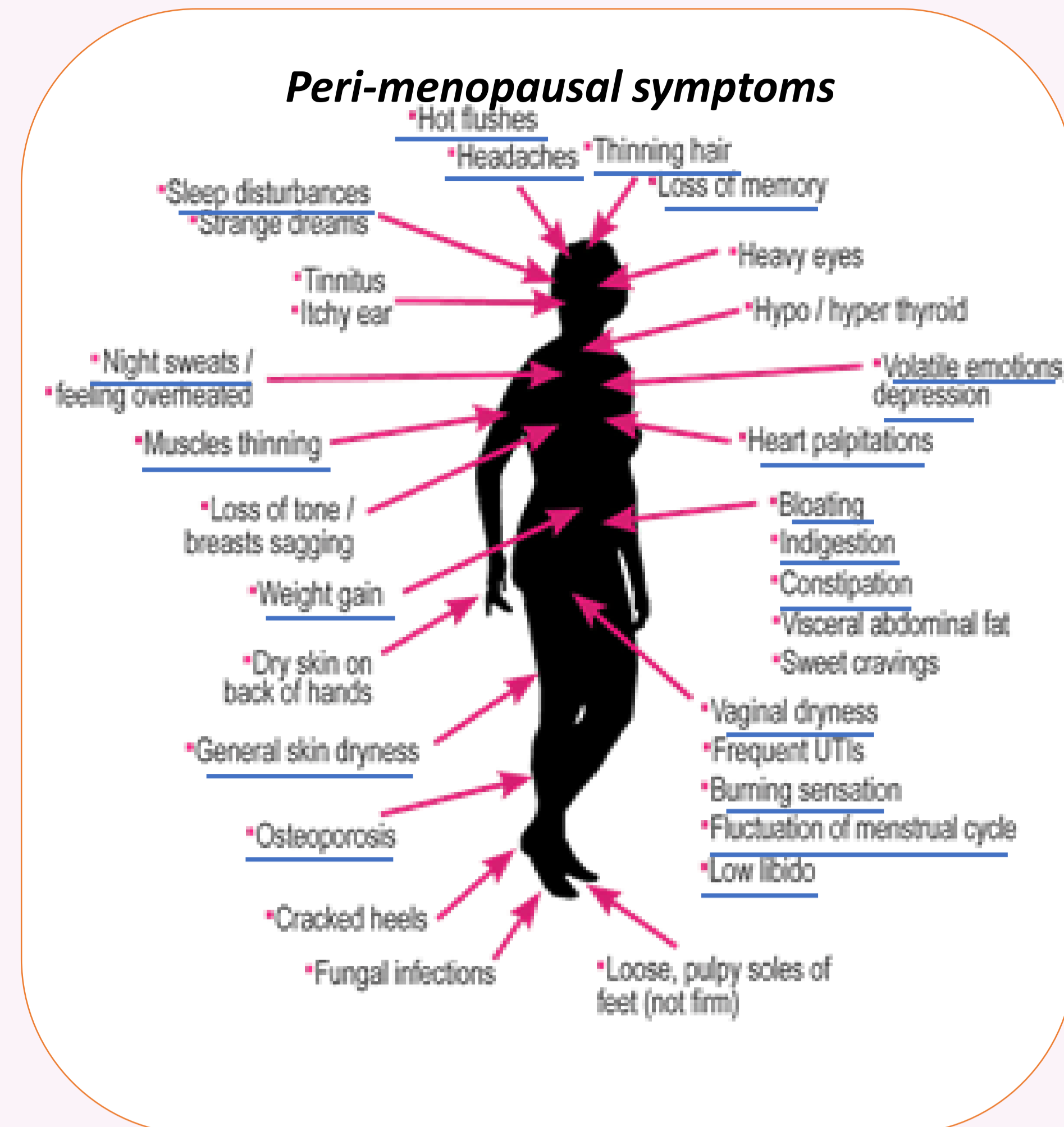
## Focus on women's health

- Sustainable Developmental Goal 3 : "Ensure healthy lives and promote well-being for all at all ages"
- Womens' health in India focuses on maternal care and contraception; and lately adolescence
- What about after 45??

## OBJECTIVES

To estimate prevalence of menopausal symptoms among peri-menopausal women in rural and urban Vadodara

To find out the association of bio-chemical markers (S. Calcium and Vitamin D) with musculo-skeletal (osteoporotic) symptoms



## METHODOLOGY

### Study design:

Analytical cross-sectional study

### Study area:

Urban and rural field practice areas of Department of PSM, Medical College Baroda

### Study population:

The study included women in the menopausal age group between 45-55 years, as defined by the Indian Menopause Society (IMS)

### Sample size:

- Pilot study (100 sample size)
- Questionnaire developed and validated with Menopausal Rating Scale(MRS) using Principal Component method of Exploratory factor analysis
- Prevalence 40% (p) with 95% confidence limits and power 80, sample size was estimated to 145 (npower 2.0 software) each, for rural and urban area
- 290 peri-menopausal age group women (45-55 years; defined by Indian Menopausal Society) were interviewed purposively

### Symptom Score-Likert Scale:

'Symptom absent' score given was 'zero'

### Based on severity

- mild (sometimes); Score of '1'
- moderate (once a week); Score of '2'
- severe (often in a week); Score of '3'
- very severe Score of '4'

Psychosomatic (27 symptoms)  
Genito-urinary (9 symptoms)  
Musculo-skeletal (5 symptoms)

## Biochemical Markers

- ✓ **Calcium**: Measured using Arsenazo Dye, normal values - 8.4-10.2 mg/dL
- ✓ **25-OH Vitamin D**: Measured using Chemiluminescence immunoassay method
- Deficiency : < 10 ng/mL
- Insufficiency : 10 – 30 ng/mL
- Sufficiency : 30 – 100 ng/mL
- Toxicity : > 100 ng/mL

## Data Management

Data entry was done in EpiData entry software (V3.1) with data capture instrument

Validation during data entry was ensured using strict data entry checks. Data analysis was done in MedCalc V12.5.0, EpiData Analysis V2.2.2.183

## Key output variables

Prevalence of symptoms analyzed as proportions

Scores reported as Median and Inter-quartile range (IQR)

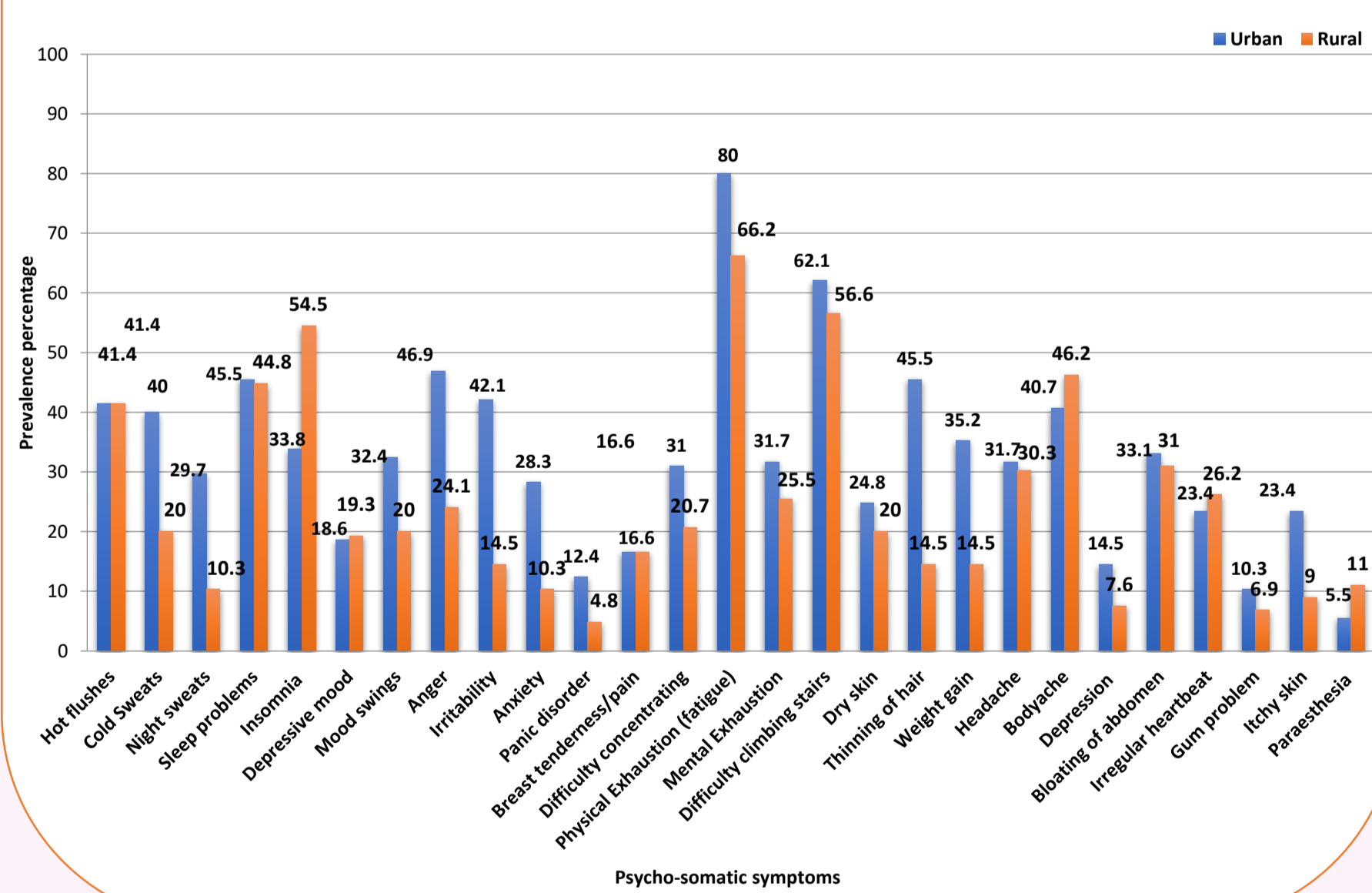
Mann Whitney U test for association between symptom scores in the pre and post-menopausal groups

Spearman's Correlation coefficient ( $\rho$  - rho), for correlation between the musculo-skeletal scores and levels of S. Calcium and Vitamin D

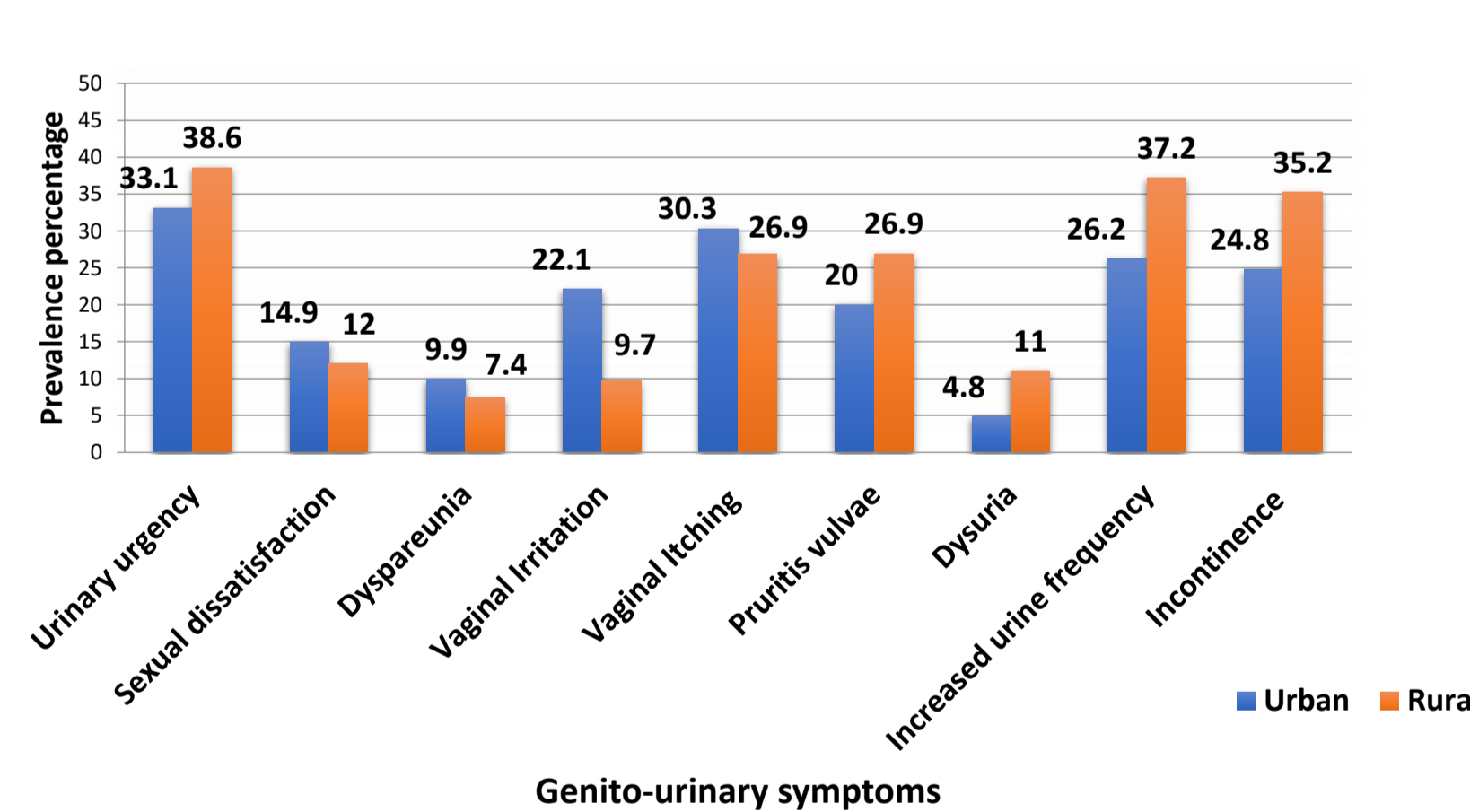
*p-value of less than 0.05 is considered as statistically significant*

## RESULTS

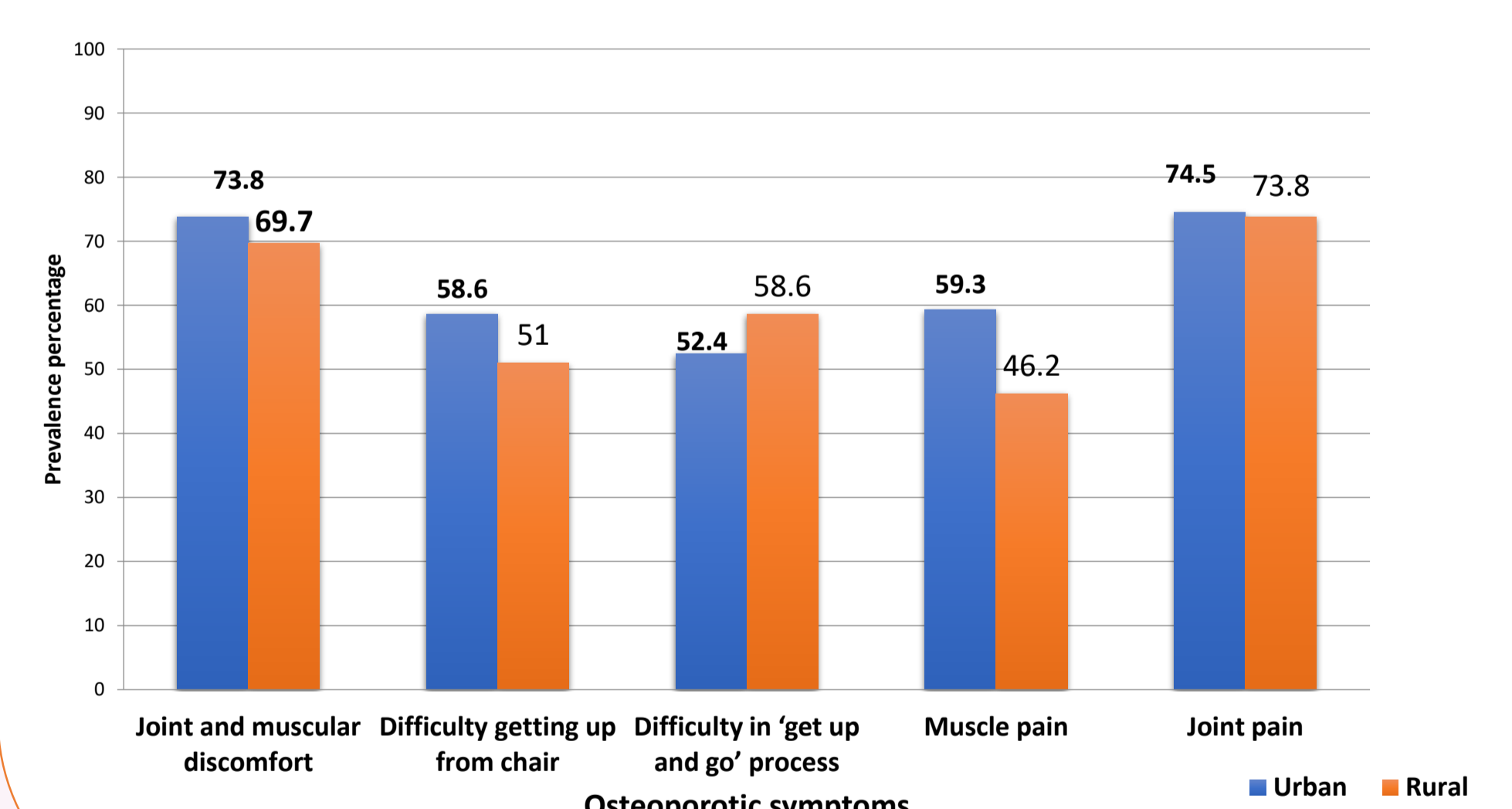
### Prevalence of psychosomatic symptoms among women in the peri-menopausal age group of 45-55 years in urban (N=145) and rural (N=145) Vadodara



### Prevalence of genito-urinary symptoms among women in the peri-menopausal age group of 45-55 years in urban (N=145) and rural (N=145) Vadodara



### Prevalence of musculo-skeletal symptoms among women in the peri-menopausal age group (45-55 years) in urban (N=145) and rural (N145) Vadodara



### Prevalence of genito-urinary menopausal symptoms among pre-menopausal and menopausal women in urban and rural Vadodara

Symptoms present	Pre-menopausal N=80		Menopausal N=210	
	N (%)	Median	N (%)	Median
Urinary urgency	18 (22.5)	0 (0-0)	86 (41.0)	0 (0-1)
Sexual dissatisfaction*	11 (15.9)	0 (0-0)	20 (12.5)	0 (0-0)
Dyspareunia *	07 (10.1)	0 (0-0)	13 (08.1)	0 (0-0)
Vaginal/private part Irritation	16 (20.0)	0 (0-0)	30 (14.3)	0 (0-0)
Vaginal/private parts Itching	20 (25.0)	0 (0-0.75)	63 (30.0)	0 (0-1)
Pruritis vulvae	15 (18.8)	0 (0-0)	53 (25.2)	0 (0-1)
Dysuria	06 (07.5)	0 (0-0)	17 (08.1)	0 (0-0)
Increased frequency of urine	11 (13.8)	0 (0-0)	81 (38.6)	0 (0-1)
Incontinence	09 (11.3)	0 (0-0)	78 (37.1)	0 (0-1)
Genito-urinary score	1 (0-3)		2 (0-4)	

**Mann-WhitneyU=678,p=0.008Test statistic Z (corrected for ties=2.631)**

## CONCLUSIONS

Genito-urinary symptoms were slightly more in rural as compared to the urban peri-menopausal women; while the musculoskeletal symptoms were highly prevalent among the rural and urban women and comparable

Clustering of lower Vitamin D levels was more evident as compared to S.Calcium levels when compared with higher musculo-skeletal scores

### Prevalence of musculo-skeletal symptoms among pre-menopausal and menopausal women in urban and rural Vadodara

Symptoms present	Pre-menopausal N=80		Menopausal N=210	
	N (%)	Median	N (%)	Median
Joint and muscular discomfort	53 (66.3)	1 (0-1)	155 (73.8)	1 (0-1)
Difficulty getting up from chair	29 (36.3)	0 (0-1)	130 (61.9)	1 (0-1)
Difficulty in 'get up and go'	32 (40.0)	0 (0-1)	129 (61.4)	1 (0-1)
Muscle pain	36 (45.0)	0 (0-1)	117 (55.7)	1 (0-1)
Joint pain	46 (57.5)	1 (0-1)	169 (80.5)	1 (1-2)
Musculo-skeletal score	3 (1-5)		5 (2-6)	

**Mann-Whitney U=5658.50, p< 0.0001 Test statistic Z (corrected for ties=4.319)**

## RECOMMENDATION

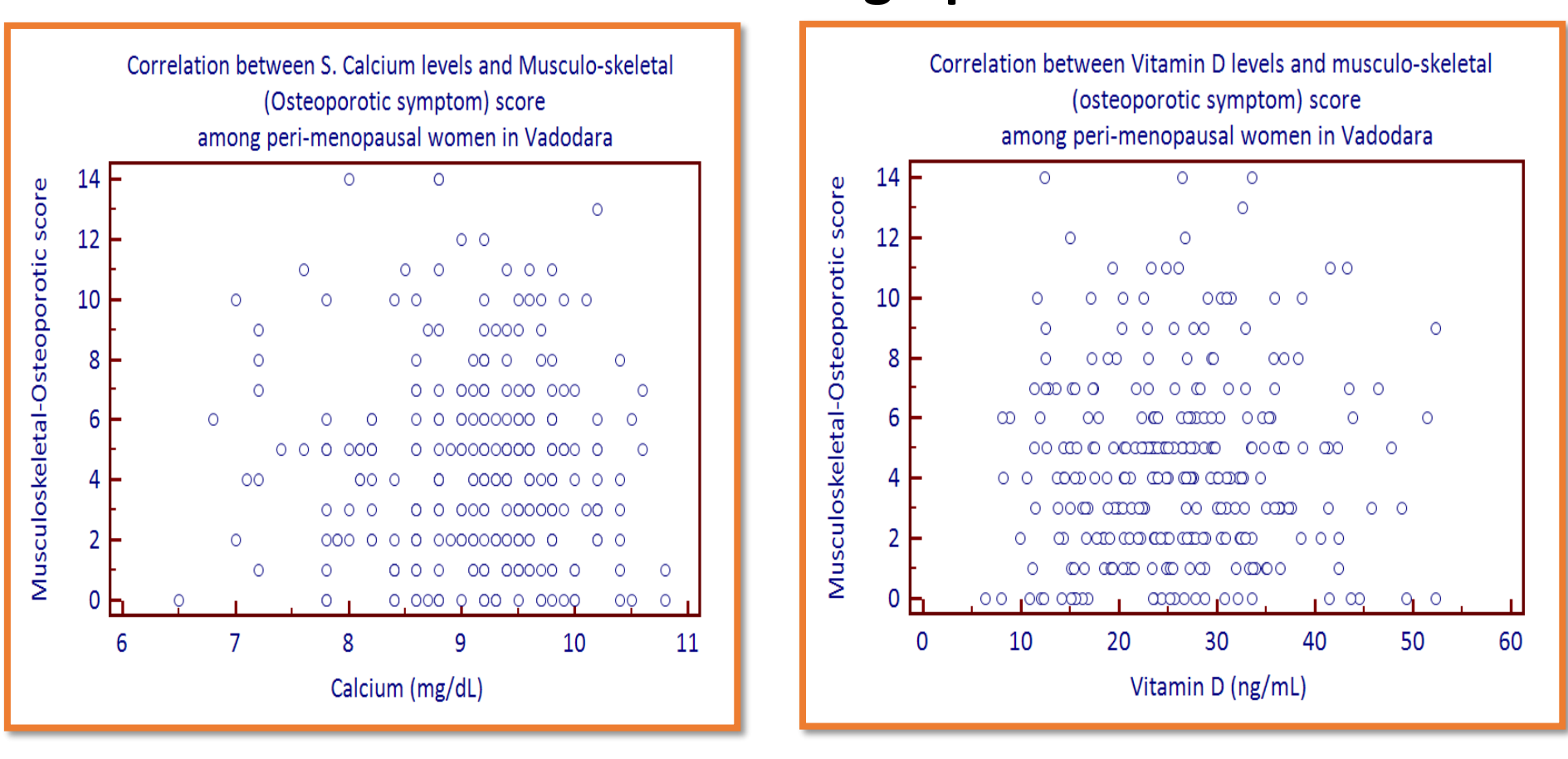
Body Mass Index, Bone Mineral Density and Osteoporotic Self-Assessment tool (Score) need to be evaluated for their importance for correlation of musculo-skeletal symptoms

THANK YOU

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### Correlation graph



$\rho$  Rho=-0.0181, p=0.76

$\rho$  Rho= 0.0591, p=0.32

### Box and whisker plot

