

**“A CROSS SECTIONAL STUDY ON DISEASE COURSE  
AND PROGNOSIS OF PATIENTS WITH REGIONAL  
OSTEOPOROSIS AND HIP OR LUMBAR VERTEBRAL  
FRACTURE”**



*Thesis submitted  
in partial fulfillment of the requirements  
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**DOCTOR OF PHILOSOPHY**

By

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# Conclusion

## **CONCLUSIONS**

1. The mean age of the subjects affected by hip or vertebral fractures was 63.31 years with an age range of 47 to 85 years.
2. The number of females in the study group was quite a bit greater (96.77%) than the males (3.23%), which indicates that women had a larger risk of hip and vertebral fractures than men do.
3. The most common aetiology was Road traffic injury affecting 58.06% of the study population, followed by falls and sports injuries in 34.68% and 7.26% of the study population respectively
4. There was a huge variation in the proportion of subjects classified as osteoporosis when different sites were considered in the study population
5. The prevalence of osteoporosis was 25.81%, and 20.16% based right and left femoral neck T-scores. The prevalence based on any femoral neck score was 30.6%. T-scores, the occurrence of osteoporosis was 16.13% on the right and 14.52% on the left and 20.2% when any side was considered positive. The prevalence of osteoporosis was 41.94% based on lumbar spinal t-scores.
6. The proportion of subjects with osteopenia was 69.35%, 77.42% and 67% as assessed by femoral neck T-score right side, left side and Bilateral. The proportion of subjects with osteopenia was 77.42%, 79.84% and 76.20% as assessed by femur T-score right side, left side and Bilateral. It was 56.45% at spine

7. The proportion of subjects with osteoporosis was highest at spine, followed by femoral neck and least at femur in the study. The proportion of subjects with osteoporosis had shown gradually increasing trend with increasing age of the person. The differences in the osteoporosis across was statistically significant ( $P < 0.005$ )
8. The prevalence of osteoporosis was greater in females at the femoral neck (30.8% vs 17.5%) and spine (4.5% against 17.5%), although the proportion of osteoporosis at the femur was slightly higher in men than in females (25% in males versus 20% in females).
9. Smoking, type of diet and presence of diabetes had no statistically significant association with osteoporosis in the study. The statistical significance of the association between religion, alcohol etc. could not be evaluated due to inadequate sample size.
10. The mean neck Z score was -0.25 and -0.30 on right and left a side. At femur, the mean Z score was -0.16 and -0.24 on right and left sides respectively.

#### **STRENGTHS:**

1. The key strength of the study is it has highlighted the presence of significant site-specific variations in the proportion of subjects with osteoporosis in people affected by fracture of the hip and vertebrae
2. Another key strength of the study was, it has attempted to establish whether there are any key differences in the pattern of site-specific osteoporosis based on key demographic variables like age, gender, dietary practices etc.

3. Since the study has used an objective measure (Bone Mineral Density as assessed by DEXA) to assess the key outcome of interest, there is minimal chance of bias in the outcome estimation and final conclusions of the study

**LIMITATIONS:**

1. Statistical significance of many associations between the explanatory variables and osteoporosis could not be assessed due to inadequate sample size

**RECOMMENDATIONS:**

1. Clinicians treating the patients with osteoporosis must be sensitized regarding huge site-specific variations in presence and degree of osteoporosis. Hence screening of a single site may lead to gross underdiagnoses of osteoporosis
2. All efforts to should be made to prevent the osteoporosis-related fractures by early identification of these high-risk subjects and initiation of appropriate medical and non-medical management (Including counseling regarding diet, physical activity, precautions to avoid falls and other injuries etc)