

## Relationship between bone densitometric findings and Mental Index of the mandible observed in panoramic radiography in women

Ali Bagherpour (DDS&MSc)\*<sup>1</sup>, Mahrookh Imanimoghaddam (DDS&MSc)<sup>2</sup>  
Mohammad Reza Hatf (MD)<sup>3</sup>, Habibollah Esmaili (PhD)<sup>4</sup>

<sup>1</sup> Assistant Professor, Department of Oral & Maxillofacial Radiology, Mashhad Dental School, Mashhad, Iran.

<sup>2</sup> Associate Professor, Department of Oral & Maxillofacial Radiology, Mashhad Dental School, Mashhad, Iran.

<sup>3</sup> Associate Professor, Department of Rheumatology, Mashhad University of Medical Sciences, Mashhad, Iran.

<sup>4</sup> Assistant Professor, Department of Community Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

---

### Abstract

**Background & Objective:** Bone densitometry is an appropriate method for the evaluation of the patients' skeletal status. This study was done to determine, the relationship between MI (Mental Index) of mandibular bone in panoramic radiography and skeletal status in femoral neck and lumbar vertebrae (L2-L4) in women referring to the radiology department.

**Materials & Methods:** In this cross sectional descriptive study, the panoramic radiographs of 67 healthy women over 35 years old referring to radiology department Mashhad, Iran during 2004, were assessed and their MIs recorded. All of the patients were then referred to Toos Bone Densitometry Center, for bone densitometry in left femoral neck and lumbar vertebrae (L2-L4), using DEXA technique with Osteocore apparatus. The patients were divided into three categories of normal, osteopenic and osteoporotic in each skeletal region according to their T-score. The data were analyzed using ANOVA and Pearson's correlation coefficient.

**Results:** The mean of Mental Index between normal and osteopenic subgroups of skeletal status in femoral neck showed a significant difference ( $P=0.042$ ). The mean of Mental Index between normal and osteoporotic and osteopenic and osteoporotic subgroups of skeletal status in lumbar spine region showed a significant differences ( $P=0.02$  &  $0.05$ , respectively). The Mental Index was significantly related to T-scores in femoral neck and L2-L4 regions ( $r = 0.33$  &  $0.32$ , respectively,  $P<0.01$ ).

**Conclusion:** This study showed that using Mental Index of mandibular bone can be useful for estimating skeletal status of patients but is not enough for precise evaluation of skeletal status of patients.

**Key Words:** Bone Densitometry, Panoramic Radiography, Mental Index, Mandible

---

\* Corresponding Author: Ali Bagherpour (DDS&MSc), E-mail : BagherpourA@mums.ac.ir