

## Bone Density Status and Vitamin D and Calcium Concentrations in Pregnant and Non-Pregnant Women

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20443354&lokasi=lokal>

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### Abstrak

The aim of this study was to analyse differences in bone density and vitamin D and calcium concentrations between pregnant and non-pregnant women. Methods: This was an analytical, cross-sectional study of women aged 30 years or over, residing in the Puskesmas Bangkalan district. The sample population was chosen at random and included 10 pregnant women in their third trimester and 10 non-pregnant women. This observational study consisted of an interview, a blood test, and a 24-hour recall. The concentration of serum vitamin D (25(OH)D) was measured by Gas Chromatography and a Photometric Test measured the concentration of serum calcium. Participant's bone density was measured by bone ultra sonometer. The data was analysed using the Mann-Whitney test and assessed ultraviolet-B exposure, bone density values, and consumption of vitamin D, calcium, energy, and protein. The Student t-test was used to analyse serum vitamin D and calcium concentrations. Results: There were no differences between the groups' serum vitamin D concentrations ( $p = 0.946$ ). However, there were significant differences between the groups' serum calcium concentrations ( $p = 0.047$ ) and bone density values ( $p = 0.019$ ). Conclusions: A high prevalence of vitamin D deficiency ( $25(\text{OH})\text{D} < 50 \text{ nmol/L}$ ) and insufficiency ( $25(\text{OH})\text{D} < 80 \text{ nmol/L}$ ) was observed in both groups. The mean serum calcium concentrations and bone density values were lower in pregnant subjects than non-pregnant subjects.