

A comparative Study by Gender of Vitamin D Levels In Bahrainis and Expatriates Unexposed to the Sun

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Background: Vitamin D deficiency is a matter of concern among people of the Arabian Gulf region. Duration of exposure to the sun plays a significant role in vitamin D and calcium levels. Most Bahraini employees work indoors with limited exposure to the sun.

Objective: To evaluate vitamin D levels of Bahraini and expatriate subjects by gender who have non-exposure to sunlight

Design: An Observational Cross-Sectional Study.

Setting: Arabian Gulf University, College of Medicine and Medical Sciences, Physiology Department and Middle East Hospital, Bahrain.

Method: The study was carried out on indoor, non-exposed to the sun subjects in Bahrainis (total number =138) and expatriates (total number 117). The subjects were all non-exposed to the sun and were divided into four groups: male Bahrainis (n= 65), female Bahraini (n=73), male expatriates (n=68), and female expatriates (n=49). The study was performed from 1 October 2018 to 30 September 2019. The level of vitamin D in all four groups was evaluated. A blood sample of 5ml was obtained after securing consent and approval.

Data were analyzed using SPSS version 23.0. Two independent samples and an independent t-test were used to test the significant mean differences in different groups. P-value of less than 0.05 was considered statistically significant.

Result: There was no significant difference in vitamin D levels when we compared the values obtained by gender. Vitamin D level (18.89 ± 0.99 ng/ml) for all females from Bahraini and expatriate subjects was not significantly different when compared with vitamin D level (18.71 ± 0.83 ng/ml) obtained for total males, Bahraini and expatriate subjects. When we compared the level of vitamin D by nationality, i.e., Bahrainis and expatriates there was also no significant difference, 19.35 ng/ml and 18.14 ± 0.92 ng/ml, respectively. To detect if there is a difference in vitamin D levels between males and females among Bahrainis only, our results showed that vitamin D level for female Bahrainis (19.08 ± 1.42 ng/ml) was not significantly different to vitamin level in Bahraini males (19.66 ± 1.01 ng/ml). A similar non-significant difference result was obtained between female and male expatriates; 18.61 ± 1.26 ng/ml and 17.81 ± 1.31 ng/ml, respectively.

When comparing vitamin D levels between only female groups, we found out that vitamin D levels in female Bahrainis and female expatriates was no significantly different between the two female groups, 19.08 ± 1.42 ng/ml and 18.61 ± 1.26 ng/ml, respectively. Also, there was no significant difference in vitamin D levels between male Bahrainis (19.66 ± 1.01 ng/ml) and male expatriates (17.8 ± 1.31 ng/ml).

Conclusion: Non-exposed Bahrainis had no significantly different level of vitamin D in comparison to non-exposed expatriates. Also, there was no significant difference in vitamin D levels when comparing male and female Bahrainis and also in male and female expatriates. No significant difference was found when comparing vitamin D levels between male Bahrainis and male expatriates. Results between female groups in both Bahraini and expatriates were not significantly different, as well. The non-significant results among all non-exposed groups could be attributed to the different types of diet or different lifestyles in all groups that compensate for sun exposure.