

## 4<sup>th</sup> Global Summit on

# Healthcare

November 09-10, 2015 Dubai, UAE

### Hypo-vitaminosis D in healthy toddlers and preschool children from Western Saudi Arabia

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**Background:** Vitamin D deficiency is common in Saudi Arabia. No sufficient data are available on the vitamin D status of preschool children.

**Aims:** To investigate the vitamin D status among toddlers and pre-school children and to evaluate the factors associated with hypo-vitaminosis D in Western Saudi Arabia.

**Methods:** A cross-sectional study was conducted on 503 pre-school children visiting the pediatrics clinic at Al-Noor and Al-Salam Hospitals in Makkah. The children were divided into two age group categories: 1-3 years (toddlers) and 3-6 years (preschool). Socio-demographic factors, life-style factors, eating habits and body mass index (BMI), as well as 25-(OH)-vitamin D3, parathyroid hormone, calcium, phosphorous and alkaline phosphatase concentrations were determined.

**Results:** Sixty-three percent of children had vitamin-D deficiency. Vitamin-D in the toddlers was significantly higher than in the pre-school children. Vitamin-D levels showed a significant negative correlation with BMI ( $r=-0.419$ ,  $P<0.001$ ), and duration of breast-feeding ( $r=-0.270$ ,  $P=0.027$ ), but a significant positive correlation with vitamin D intake ( $r=0.335$ ,  $P=0.021$ ), calcium intake ( $r=0.25$ ,  $P=0.029$ ), duration of formula feeding ( $r=0.354$ ,  $P=0.019$ ) and outdoor physical activity ( $r=0.381$ ,  $P=0.011$ ). Multivariable predictors of hypo-vitaminosis-D were preschool age (OR=11, [95% CI: 2.78-43.57],  $P<0.001$ ), outdoor physical inactivity (OR=2.44, [95% CI:0.93-14.12],  $P<0.001$ ), obesity (OR=2.3, [95% CI:1.25-7.08],  $P=0.008$ ), overweight (OR=2.16, [95% CI:1.18-6.01],  $P=0.039$ ), inadequate vitamin D intake (OR=1.65, [95% CI:1.12-2.53],  $P=0.012$ ), exclusive formula feeding (OR=0.53, [95% CI:0.41-0.72],  $P<0.001$ ) and breast and formula feeding (OR=0.62 [95% CI:0.39-0.88],  $P=0.002$ ).

**Conclusion:** Hypovitaminosis D is a public health concern, especially in pre-school children. Possible determinants of the low vitamin D status in pre-school children in the Makkah region could be related to age, high BMI, inadequate vitamin D intake, exclusive breast-feeding and outdoor physical inactivity.

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### Results of the global youth tobacco survey and implementation of WHO framework convention on tobacco control in former Soviet Union countries

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**Objectives:** We used data from the Global Youth Tobacco Survey (GYTS) to monitor articles of the World Health Organization Framework Convention on Tobacco Control in Former Soviet Union (FSU) countries.

**Methods:** The GYTS is a school-based survey, which uses a two-stage sample design to produce representative, independent, cross-sectional estimates. The GYTS was conducted in 10 out of 12 FSU countries from 1999 to 2008.

**Results:** The prevalence of ever smoking and current smoking, smoking initiation and exposure to second-hand smoking decreased over time. Overall, willingness to stop smoking, supporting smoking bans and receiving information about the dangers of smoking increased over time.

**Conclusions:** Overall, our study shows that FSU countries had positive changes in tobacco-use prevalence and perception among youth over time. Our findings should be used as baseline measure for future tobacco-control interventions aimed at reducing tobacco use among youth. Moreover, our results call for the enforcement of restricting advertising for tobacco products.

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