

Demographic and Socio-Economical Status of Children with Lead Exposure in Venezuela

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Abstract : Children are at high risk for lead (Pb) exposure. The objective of this study was to identify risk factors that contribute to high blood lead (PbB) levels in Venezuelan children. The concentration of PbB was determined in 60 children (ages 4-9 years old), coming from the Michelena sector, Valencia District, Carabobo State. The relationship between these concentrations and socio-economical parameters (A: high quality life; B: fair quality life; C: critic poverty), Pb levels of faucet water (Pb-water) and dust Pb levels of floor (Pb-dust) of their houses, was established. Living areas were classified according to sectors and socio-economical status. Forty [40=66.7%] children resulted with PbB levels above the permissible concentration (LAPC). Average PbB was not significantly higher than the permissible levels. Odds ratio proved that children from status C are 7.28 times more likely to have LAPC of PbB than the ones coming from A or B. Thirty-four percent (34%) of the children with LAPC come from status C which could be considered the most critical status from the exposure risk point of view. The 76,3% of the sampled houses reported VSLP of Pb-water, being the Pb-water average in 35 ± 25.5 ug/L. This average significantly went superior to the permissible limit established by Venezuela and international organisms (10 ug/L). When grouping the results of PbB and Pb-water by sex, were that 50,8% of the children who presented/displayed VSLP of Pb-water and PbB. Was a significant relation ($p \leq 0.05$), between masculine sex and the VSLP of PbB and Pb-water ($\chi^2 = 3,672$). In relation to the Pb-Dust analyses, were not statistically significant differences with respect to their permissible limit value (40 ug/pie²). This study shows that by correlating geographical and health data, we can identify 'high risk' areas, leading to a proactive public health action. The results of this study are excellent, in order to take preventive measures for the care from the health. Later studies are suggested predicting main to determine of more conclusive form of levels elevated of PbB in the investigated population.

Keywords : demographic, lead, risk, socio-economical status

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