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ENVIRONMENTAL LEAD EXPOSURE OF GRADE 1 STUDENTS LIVING IN PAYATAS AND ITS EFFECT ON BLOOD LEAD AND HAEMOGLOBIN LEVELS

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Background: Lead is one of the heavy metals present in our environment, especially in dumpsites. With children living within its vicinity, these children are thereby exposed to lead and are prone to develop complications related to lead toxicity.
Objective: Determine the lead level in Payatas dumpsite and correlate it with the blood levels of Grade 1 students studying at Lupang Pangako Elementary School.
Design: Cross-sectional study design
Setting: Lupang Pangako Elementary School in Payatas, which is approximately 146.6 meters from the Payatas old dumpsite, and 520.6 meters from the new dumpsite.
Patients: All Grade 1 pupils enrolled at Lupang Pangako Elementary School for school year 2010-2011, aged 5-10 years. Five hundred eleven pupils, whose parents gave consent, were included. However, only 109 participated in the actual study.
Methodology: A questionnaire was used to gather the sociodemographic data of the participants. Thorough physical examination was done. Ambient air monitoring was done in the Payatas dumpsite area and Lupang Pangako Elementary School. Water samples were taken for lead level determination. Blood was extracted from the participants for lead and haemoglobin level determination.
Results: Elevated levels of lead were noted in the ambient air in Payatas as well as in the blood of children aged 6 years and above and have stayed in Payatas for more than 6 years. No lead was detected in the water samples collected. Anemia was noted in some subjects with elevated blood lead level.
Conclusion: Lead was not detected in the water samples collected. Elevated levels of lead were detected in the ambient air in Payatas dumpsite and Lupang Pangako Elementary School and these contributed to the elevated lead levels in the blood of the subjects. No significant correlation between the blood lead and haemoglobin levels of the subjects. Though anemia was noted to a few of the subjects, this was not significant.