[ID-P#026] Potential Exposure of Paint Lead (Pb) on Preschool's Children in Lalitpur

Deepak Dhakal
Tribhuvan University, Nepal

World Health Organization (WHO) has identified lead (Pb) and its compounds as one of the top ten chemicals of major public health concern, even relatively low levels of Pb exposure among young kids can cause serious and irreversible neurological damage including harmful to the vital organs. Lead- loaded paint remains one of the major sources of Pb exposure for children globally. Flame Atomic Absorption Spectroscopy (FAAS) AA-7000 was used for quantitative analysis of Pb followed by acid digestion EPA- 3050b method. This research was mainly focused on the premises of kindergartens/ preschools around the city center as well as the outskirts of Lalitpur in 2017 and 2022. Although the Government of Nepal has already promulgated the standard limit of Pb in paints up to 90 ppm in 2015, 100% of samples (scraped paints) taken from walls and furniture of kindergartens were venerable of Pb poisoning ranging from 112.6 ppm to 5053.4 ppm in 2017; and was slightly decreased between 100 ppm to 4000 ppm in 2022. In the case of lead- contaminated dust in school premises (indoor/ outdoor) was found between 40 ppm to 4010 ppm among 50% of samples in 2017, whereas 100% of samples were contaminated under 40 ppm in 2022. Similarly, 70% of samples contained trace levels of Pb and 30% of samples contained between 5 ppm to 10 ppm in dust collected randomly from roadsides near the research location. Overall, paints can be taken as the principal source of Pb exposure. It is well known that no levels of Pb exposure will be safe for children. So, it is highly recommended that concerned authorities strengthen the existing rules and regulations prior to focusing the lead-free paints in schools.