

**MOTOR VEHICLE EMISSIONS: A MAJOR CAUSE OF LEAD
POISONING AMONG PUBLIC SCHOOL CHILDREN OF
KATHMANDU VALLEY, NEPAL**

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**A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Public Health in
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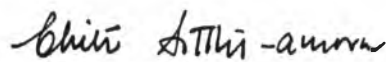
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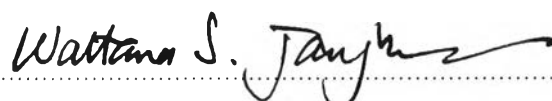
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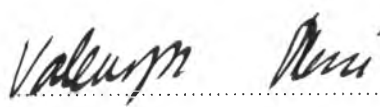
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ABSTRACT

Air quality in Kathmandu valley of Nepal is considerably deteriorated to a critical level in recent times. Geographical structure of Kathmandu valley, non-restriction of old engined vehicles, use of leaded and low quality fuel, poor road condition and speedy rise in the vehicle number contribute to the air pollution problem in Kathmandu valley. Lack of infrastructure and adequate transport, road and urban planning policy are also the supporting factors to increase the air pollution.

Lead at any level is harmful to health. It affects to the children by permanent damages of central nervous system and impairing learning ability. It also damages kidneys and liver. The number of children admitting to the hospital has been increasing dramatically for the last few months due to health hazard. The main purpose of this study is to determine lead (Pb) exposure to general people, specially to the children.

It is a cross sectional study. The exposed children to lead pollutant will be selected from public school of Kathmandu valley and the non-exposed children will be taken from the public school of pollution free area, i.e., Gorkhkali municipality of Gorkha district, Nepal. Multi-stage sampling method will be applied for sample selection.

The blood lead level of childrens will be measured in both exposed and non-exposed area. The measurement of blood lead is a appropriate method to find out the lead exposure. The lead contained in the air of Kathmandu valley and Gorakhkali urban

municipality will also be determined for comparison. . After the determination of lead exposure, the government and or other non-governmental institution could implement the appropriate intervention to reduce the health effects of lead pollutant in Kathmandu valley.

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ACRONYMS AND ABBREVIATIONS

CBS	=	Central Bureau of Statistics
CDC	=	Centre for Disease Control
CO	=	Carbon Monoxide
CPSC	=	Consumer Product Safety Commission
DOR	=	Department of Road
DOTM	=	Department of Transport Management
FDA	=	Food and Drug Administration
GNP	=	Gross National Product
HC	=	Hydrocarbon
NAAQS	=	National Ambient Air Quality Standards
NESS	=	Nepal Environmental Scientific Services
NIOSH	=	National Institute for Occupational Safety and Health
NO ₂	=	Nitrogen Dioxide
NPC	=	National Planning Commission
OSHA	=	Occupational Safety and Health Administration
Pb	=	Lead
Pb B/dl	=	Blood Lead Level per decilitre
PEL	=	Permissible Exposure Limit
SO ₂	=	Sulfur Dioxide
SPM	=	Suspended Particulate Matter
TLV/TWA	=	Threshold Limit Value/Time Weighted Average
TPO	=	Traffic Police Offices
WHO	=	World Health Organization
ZTMO	=	Zonal Transport Management Offices