Influence of hygiene behaviour on nickel exposure among nickel processing plant workers in Indonesia

K Rumchev, J Spickett and N Furgaan
School of Public Health, Curtin University, Curtin Health Innovation Research Institute, Australia

Some nickel compounds may enter human's body and induce health impairment among exposed workers. Results of studies indicate that blood and urine chemical concentrations as a result of occupational exposure are associated with the hygienic behaviour of workers. The study was conducted in a nickel processing plant in Indonesia. The aim of the study was to evaluate the influence of changes in hygienic behaviour on nickel exposures, and to assess the effectiveness of three worksite education strategies aimed to reduce occupational nickel exposure. A quasi-experimental study was conducted to improve the hygienic behaviour and to evaluate the effectiveness of worksite health education intervention programs. The study subjects were grouped into three groups according to the type of intervention program implemented: 1) booklet only 2) booklet and lectures on nickel exposures 3) booklet, lectures and a feedback. During the study the concentrations of air dust and urine and blood nickel concentrations were measured. The study results demonstrated a significant increase in the aspects of knowledge, behaviour and attitude among workers during the post intervention assessment when compared with the pre intervention period with the highest improvement established among the third intervention group which included booklet, lectures and a feedback. Furthermore, the study established a significant difference in urine and serum nickel concentrations between pre and post intervention. The study outcomes showed that improvement in hygienic behaviour was associated with reduced serum and urine nickel concentrations among exposed workers.

Biography

Krassi Rumchev has more than 20 years of research experience in the areas of occupational and environmental health. Recently her research interest has focused on exposure assessment and characterisation of ultrafine and nanoparticles, including diesel particulate matter and the associated adverse health effects among the public and workers. Currently, Dr. Rumchev is the Program Leader of the Health, Safety and Environment Department within the School of Public Health, Curtin University, Perth, Australia.