

Environmental Administration and Management at the Local Level, Nepal (SEAM-Nepal), Dharan, NP

Background: Tea workers have the risk of being exposed to agro chemicals. Farm workers engaged in pesticide spraying reported symptoms potentially associated with exposures to pesticides. Diverse morbid conditions and deviation in blood parameters have been reported. Effect of pesticide exposure and safety precaution among farm workers is alarming in developing countries. Aim: To find out health problems and level of alanine aminotransferase (ALT), aspartate aminotransferase (AST), haemoglobin, white blood cells, creatinine, blood sugar and acetyl cholinesterase among tea workers.

Methods: A cross-sectional study was done to enroll voluntarily participated 262 tea workers of Haldibari, Danabari and Kanyam tea estates of Nepal. They were interviewed by using semi-structured questionnaire. General health check-up and measurement of blood pressure, height and weight were done. Laboratory investigations comprised acetyl cholinesterase, alanine transaminase, aspartate transaminase, haemoglobin, white blood cell, creatinine and blood sugar. Data was analyzed in SPSS V 16.0.

Findings: Among 262 workers, maximum number of workers (60.7%) had work experience of more than 10 years. Most common personal protective equipment used by the workers (10.3%) was simple cloth masks. Eye irritation (34.4%), headache (30.9%), nausea (15.6%), low back pain (32.4%), gastritis and duodenitis (17.6%), arthralgia (14.9%), injury (14%), underweight (11.1%), mild anaemia (31.9%) and leucopenia (9.3%) were prevalent. The difference in means of creatinine level between directly exposed group of workers and those who were not was statistically significant. The ALT level or AST level between directly exposed group of workers and those who were not was statistically significant. The difference in means of acetyl cholinesterase level between directly exposed group of workers and those who were not was statistically non-significant.

Interpretation: Workers reported symptoms potentially associated with exposures to pesticides. Musculoskeletal problems, gastritis and duodenitis, injury and anaemia were common among tea workers. Pesticides might have affected liver and kidney function of the workers. Abnormal liver function of the workers might be a hint to guess the effect of organophosphorus or carbamates pesticides in the workers exposed to the pesticides. A worker with history of exposure to pesticides and abnormal alanine aminotransferase (ALT) and aspartate aminotransferase level (AST) might be looked with suspicion as a case suffering from adverse effect of pesticides. Effect of organophosphates or carbamates on cholinesterase activity could not be shown among tea workers. We could not ignore falsely depressed blood parameters which could have happened because of co-morbid conditions. However, the possible effect of pesticides on health was shown in this study.

Funding: SEAM-Nepal.

Abstract #: 02SEDH032

A deeper look at oral health and malnutrition in Nepal

C. Tsang¹, K. Sokal-Gutierrez², H. Barkan³, K. Ronsin¹, A. Baral¹; ¹UC Berkeley, Berkeley, CA/US, ²UC Berkeley School of Public Health, Berkeley, CA/US, ³UC Berkeley, Berkeley, CA/US

Background: With rapid urbanization, Nepal experiences changes in nutritional practices that are influencing the nutritional status and oral health of local communities. Reported by the World Food Programme as having one of the world's highest rates of malnutrition, Nepal has 41% of its children under 5 stunted. Nepal's high prevalence of early childhood caries has yet to be addressed. This study

uses a baseline analysis of both urban and rural communities to explore key social and economic factors contributing to poor oral health and nutrition.

Methods: Maternal and child data were collected through sampling participants in 5 community health camps in urban and rural areas. 632 Mothers were interviewed about nutrition and oral health knowledge and practices. 836 children received dental exams and height/weight measurements for nutrition status. 304 (36.4%) of the children ages 0-8 years were rural and 532 (63.6%) were urban. The chi-square and Student's t-test on SPSS were used to compare urban with rural responses. Mann-Whitney U, Fisher's exact, and Spearman's rank order correlations tests were performed for association analyses.

Findings: Baseline analyses examining height-for-age malnutrition found 37.4% of the child population stunted and 16.7% chronically malnourished. Weight-for-age malnutrition found 13.4% are underweight. Further analysis using the chi-square test suggests urban mothers and children are more likely to own a toothbrush and toothpaste and visit the dentist than the rural population (all p-values < 0.0001). Access to junk food and care, knowledge and practices, and health outcomes are strongly associated. Increased urban exposure to and consumption of junk food is associated with significantly higher levels of childhood caries despite urban mothers' being more knowledgeable or oral health and nutritional practices and having greater access to health care than do rural mothers. Rural populations with less knowledge, access to care, and junk food consumption are also less prone to childhood caries.

Interpretation: There is an increasing concern that junk food consumption is reshaping traditional practices and reinforcing malnutrition and childhood caries in Nepal. Greater understanding of the factors associated with poor oral health and malnutrition can help maternal-child health services implement more effective interventions to reduce the consumption of junk food and improve overall health knowledge and practices in the household and at school.

Funding: This project is funded by the UC Berkeley Undergraduate Research Apprentice Program.

Abstract #: 02SEDH033

Women's perceptions of reproductive healthcare in the Tribal Communities of Melghat, India

P. Uppalapati¹, J. Lewis¹, S. Chhabra²; ¹University of Connecticut School of Medicine, Farmington, CT/US, ²Mahatma Gandhi Institute of Medical Sciences, Sevagram, IN

Background: India will not meet UN MDG 4: reduce child mortality and 5: reduce maternal mortality by 2015. In tribal areas of India, the maternal mortality and under-five mortality is almost double the national rate at 96/1000. Melghat is a remote tribal area in Maharashtra known for its high rates of malnutrition, extreme poverty, and a scarcity of accessible and properly equipped health care centers. In Melghat, 56% of births occur at home. The Kasturba Health Society built a Mother and Child Hospital in Melghat in 2012 to provide prenatal care and safe births to the tribal population. However, the number of women using the hospital's services has been lower than expected. The government currently funds health workers such as ASHAs who live in villages. These workers are responsible for prenatal care, dispensing free contraception, and recommending hospital deliveries. They are also compensated when a woman is sterilized, a practice to promote this procedure. This decreases the incentive for them to teach about birth spacing and