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Prevalence of water, sanitation and hygiene knowledge, norms and practices in bateyes in La Romana, Dominican Republic

J. Rosenfeld¹, R. Berggren², K. Dowdell³, P. Bropleh³, J. Ascher³; ¹Center for Medical Humanities & Ethics, University of Texas Health Science Center at San Antonio, San Antonio, TX/US, ²Center for Medical Humanities & Ethics; University of Texas Health Science Center at San Antonio School of Medicine, San Antonio, TX/US, ³University of Texas Health Science Center San Antonio, School of Medicine, San Antonio, TX/US

Background: Bateyes are settlements where migrant Haitian laborers live in poverty while working in agriculture, including privately owned sugar plantations in the Dominican Republic. Approximately 500,000 people, or 5% of the total Dominican population, live in a batey. While national surveys estimate that 86% of Dominicans access improved water sources and 83% access improved sanitation, little is known about water, sanitation and hygiene (WASH) indicators in bateyes. A cross-sectional study was conducted to establish WASH knowledge, norms and practices, so as to contribute to the dearth of literature on the health of batey residents and design a community-based health education program.

Methods: In June 2014, the Center for Medical Humanities & Ethics at the University of Texas Health Science Center San Antonio conducted a cross-sectional study of bateyes in La Romana. Using stratified random sampling, 10 bateyes were selected proportionally to the following variables' distribution within a sampling frame of 53 bateyes; the presence of a bio-sand filter program and health promoter, distance from a town, and batey ownership. 184 self-identified male or female heads of household over the age of 18 years were consented and interviewed using a validated household survey. The primary outcomes were: preventive health knowledge; water treatment, defecation, and hand washing norms and practices; Social Capital; and family-reported diarrhea in children under 5. This study was approved by the UT Health Science Center Institutional Review Board.

Findings: Sample demographics and preliminary results are currently available. Respondents were predominantly female (66%), had only completed primary school (49%), and had an average age of 43 years. The majority of households (65%) obtain drinking water from an outside tap and treat their drinking water with chlorine (47%) or a filter (22%). 34% of the sample use an unimproved sanitation facility, while 14% openly defecate. When asked to provide 5 times it is important to wash hands, only 17% could provide 4 or more correct answers. Chi-square and t-tests will be used to analyze results on preventative health knowledge; drinking water, defecation and hand washing norms and behaviors; social capital, and the incidence of diarrhea in children under 5 years. Regressions will describe predictors of WASH knowledge and behavior, as well diarrheal disease in children under 5.

Interpretation: The results of this study will determine the need for, focus of and key messages for a participatory education program aimed at preventing diarrheal, respiratory and vector borne illnesses. Our rigorous study design and randomized sampling showed widespread prevalence of disease risk factors, in the 53 bateyes sampled. We used validated data collection tools and protocols, so that study observations serve as a reasonable baseline for comparison after future interventions.

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Assessing the continuum of care in South Asia and Sub-Saharan Africa

K. Singh¹, W.T. Story¹, A. Moran²; ¹University of North Carolina at Chapel Hill, Chapel Hill, NC/US, ²United States Agency for International Development (USAID), Washington, DC/US

Background: Increased global focus has been placed on the continuum of care in efforts to improve maternal health. The goal of the continuum approach is to provide women with essential reproductive health services before, during and after pregnancy and delivery. South Asia and Sub-Saharan Africa—where 86% of maternal deaths occur—desperately need improvements in the provision of continuum of care services. The objectives of this study are to (1) quantitatively document coverage of key continuum of care services in these two regions, and (2) examine socioeconomic and demographic differentials in women who received continuum of care services versus those who did not.

Methods: This study used recent Demographic and Health Survey data (from 2010 onwards) from nine countries: Bangladesh, Nepal, Pakistan, Ethiopia, Malawi, Rwanda, Senegal, Tanzania and Uganda. The analytic sample consisted of 15,984 women between the ages of 15 and 49 who had a birth in the past year and had no missing data. Descriptive analyses were used to assess five key continuum of care services: at least one antenatal care (ANC) visit, four or more ANC visits, skilled delivery, postnatal care (PNC) for the mother, and postpartum family planning counseling. Multilevel multinomial logistic regression models were analyzed in Stata 13.0 to examine the factors associated with receiving all or some of the continuum of care services.

Findings: The descriptive results showed that 17.0% of women received all services along the continuum and 13.3% received none of the services. More specifically, the majority of women received at least one ANC visit (84.5%); however, few received the recommended four or more visits (37.9%). The largest drop-out along the continuum occurred between these two early steps (55.1% decrease). Furthermore, few women who did not receive any ANC visits went on to have a skilled delivery or received PNC (less than 5%). The regression results showed that women who received all the continuum of care services tended to be the richest (OR= 13.90; CI: 6.32, 30.59; $p < 0.001$) and most educated (OR=5.73; CI: 2.58, 12.73; $p < 0.001$).

Interpretation: The provision of key continuum of care services can be improved by better understanding where drop-outs occur. For many countries, important focus areas include providing access to four or more ANC visits, PNC, and family planning as well as increasing efforts to reach the poorest women. Despite its limitations, this study provided a current assessment of the continuum of care in regions of the world where the burden of maternal mortality is highest.

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Study of the effects of pesticide exposure among the workers of tea estates

S.B. Singh¹, P.K. Pokharel¹, P. Raut², K. Mehta¹; ¹B. P. Koirala Institute of Health Sciences, Dharan, Nepal, Dharan, NP, ²Strengthening of

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.

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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.

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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