

Background: In Ghana, maternal mortality is the second largest cause of female death, with induced abortion accounting for more than 1 in 10 maternal deaths. There is still an unmet need for family planning and maternal health services in Ghana. The aim was to qualitatively investigate knowledge of family planning services in conjunction with cultural norms, practices, and attitudes toward abortion in rural Ghana.

Methods: Community-based, cross-sectional qualitative study utilizing convenience sampling of women and men in the Barakese sub-district in rural Ghana. A focus group discussion was conducted to assess community healthcare workers' experiences with abortion. Semi-structured questionnaires were administered, coded, and assessed for relevant themes. Written informed consent was obtained. Approval obtained via the KNUST-KATH Committee on Human Research, Publication and Ethics and the University of Utah IRB.

Findings: 102 interviews were conducted: 56 women and 46 men between the ages of 18-75 were interviewed. Almost every woman (55) interviewed had been pregnant. Almost all reported some knowledge of family planning but felt there were several risks associated with family planning. Community health workers cited amenorrhea and perceived infertility as the most common reasons women stop using family planning. "The drugs made me have rapid heart rates, chest pains, and it was difficult to get pregnant. I was afraid that I wouldn't be able to have children again." Of the women interviewed, 21% reported having had an abortion. The main reasons cited for aborting were financial concerns (5) or young children at home (3). Of the women who had an abortion, two-thirds reported being unable to plan their pregnancy for reasons including ignorance to family planning methods and risks associated with family planning. These women (7) also felt that the best method of family planning was using the menstrual cycle. "It is best to only have enough children that you can give your best to." Among members in the community, 86% reported knowing someone who had an abortion. Most women induced an illness by various methods and then went to the hospital where a dilation and curettage would be performed for maternal indications. Overall, interviewees felt that abortion was wrong, but recognized that it was occurring in their community and that they would not treat a woman differently for having had an abortion. "We can likely reduce it, but we won't be able to eliminate it. Once they have in their mind that it is unwanted, they will do anything to stop it."

Interpretation: There is a significant knowledge gap between benefits and risks of birth control, prompting most women to avoid using it, leading to increased unplanned pregnancy and increased rates of unsafe abortion.

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Role of hands in diarrheal pathogen transmission in a threshold country

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Background: There is growing evidence supporting the role of dirty hands in microbiological contamination of drinking water during collection, transport, and storage. The impact of quantitatively evaluating microbial contamination on hands is important not only because hands are considered important vectors of diarrheal pathogen transmission, but have also been associated with stored water quality within the households. The present study was undertaken to investigate a quantitative relationship between fecal contamination on hands and in stored drinking water in semi-urban areas of Delhi, India.

Methods: To assess these associations, an investigation was conducted to enumerate the bacterial loads in terms of *Escherichia coli* on hands of mothers and children under five years old, in stored household water from 152 households, and in source water from peri-urban areas of National Capital Territory (NCT), Delhi. Data were also collected in the form of personal interviews from the mother of the children under 5 years old at each household in this observational study. In addition, samples from drinking water sources were also collected for the comparison with stored household drinking water samples. The Institutional Review Board of the University of California, Davis (UCD), approved the study protocol.

Findings: Fecal contamination on respondents' hands was found to be positively associated with fecal contamination in the stored drinking water ($p < 0.0001$). The levels of *E. coli* on respondents' hands were significantly associated with the prevalence of gastrointestinal symptoms within the households ($p < 0.05$). We found that presence of animals in the house was a significant risk factor associated with the higher bacterial levels found on the hand-rinse samples of the respondents ($p < 0.05$). It showed that living with domestic animals may pose a zoonotic transmission pathway for diarrheal disease pathogens, and that risk mitigation strategies could be beneficial to reduce the diarrheal disease burden from poultry and livestock exposure in the households.

Interpretation: The main limitation of the study was that diarrheal health outcomes, management practices, and hygiene behavior used in the models were self-reported by the respondents and may introduce bias and inaccuracy in the estimates. An effective point of use water treatment can help in reducing water-borne illnesses in developing countries. Our study has shown that hands may play a vital role and hence, future work should look into hands as an important role in disease transmission. Interventions could be targeted in terms of educational programs in schools and efficient hand-hygiene improvement programs at community levels to reduce the fecal contamination on hands. It is very important to conduct an interventional study to see the effects of hand-washing after getting an input from the community regarding interventions.

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Childhood lead exposure in a Vietnamese battery recycling village

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Background: Battery recycling and manufacturing are major sources of occupational exposure to lead. Residents of Dong Mai village in northern Vietnam have been involved in battery recycling since the 1970s. To address pervasive lead contamination a remediation plan was developed by Blacksmith Institute in collaboration with Vietnamese national and local authorities. This is an ongoing study with the primary aim of determining changes in child lead exposures after lead remediation activities and a secondary aim of identifying risk factors for childhood lead exposure.

Methods: All children in the village 6 years of age and younger were eligible and invited to participate in the study. No children were excluded. A total of 250 children participated in baseline measurements in December 2013; 209 of the 250 children participated in follow-up assessment in September 2014. Written informed consent was