## Quantitative Evaluation on Community Perceptions of Sanitation and Hygiene in Rural Guatemala

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Abstract: Background: The high prevalence of diarrheal diseases in the village of Tzununá, Guatemala is linked to lack of sanitation facilities and handwashing practices. Diarrheal diseases are preventable and improved access to latrines, hygiene education and clean water may improve sanitation by reducing the spread of disease. Objective: Between May 2015-January 2017, the University of Pennsylvania Chapter of Engineers Without Border (PennEWB) and local partners designed an intervention to reduce diarrheal disease by building pour flush latrines in 50 individual households and providing education on the importance of handwashing practice. Design/Methods: Through convenient sampling, we surveyed 45 households to evaluate the community's knowledge of diarrheal disease, handwashing practices, and maintenance of the latrines. Results: 92% of the study participants experienced decrease of new cases of diarrheal disease after receiving a latrine. Only 11% washed their hands after defecating in the latrine. There was gap in understanding the health outcome of latrine sanitation and handwashing education. The respondents did not connect the reduction of diarrheal disease with latrine use and maintenance. Instead, they associated their motivation for latrine use with aesthetics, proximity to their home, ease and comfort, and reduction of shame. We recommend that PennEWB adopt UNICEF or WHO education on hand washing practice. Conclusion: Social interaction and social pressure drove the household use of latrines. The latrines are being valued and cleaned. The education that the residents received did not target norms and behaviors. Latrines could be used to create a new social norm that supports behavioral change.

Keywords: diarrheal disease, latrine, open defecation, water, sanitation and hygiene

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