LATRINE COVERAGE AND USE IN THE LIMPOPO PROVINCE OF SOUTH AFRICA

by

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Background: Sanitation facilities are not adequate in many countries including South Africa and in spite of investments in sanitation programmes, the number of people with access to safe sanitation remains low, especially in rural areas. The need for good quality water and adequate sanitation are widely recognized as two essential components of social and economic development because it contributes to the enhancement of human dignity and provides a kind of freedom to people, mainly women and children.

Objective: The primary objective of this study was to assess the sanitation coverage of rural households in three wards of the Thulamela Municipality region in Vhembe district, Limpopo of South Africa. In addition 20% of toilet seats were swabbed for microbiological assessment to establish prevalence of pathogenic *E. coli* strains which could pose a health risk to vulnerable people in the households.

Methods: Assessments of rural household sanitation facilities were done between July and September 2015. Demographic questionnaires were used to assess the study households. For sample collection, four villages were chosen randomly in each of the three wards and in each village a total of 34 households were randomly visited and consent forms were given to the owner/grown up >16 years of the family to be completed. A total of 408 households were visited during the study and 136 samples were collected from each ward. A total of 84 (20%) toilet seat swab(s) samples were collected from all three wards for microbiological assessment using Total coliforms and *E. coli*. counts. An m-PCR protocol was used to determine pathogenic *E. coli* strains in swab samples.

Results: The findings of this study indicated that most of the households had functional VIP latrines. However most of the sanitation facilities required maintenance

especially on the superstructures. Some latrines had unstable and collapsing walls while some of the facilities had broken seats and seat covers. This affected the usage of latrine by rural households due to the fact that household members were afraid of the structures collapsing on them. A total of 14 toilet seat swab samples tested positive for the presence of *E. coli* and were further assessed for the presence of pathogenic *E. coli* strains. *E. coli* strains identified included Commensal *E. coli,* Atypical Enteropathogenic *E. coli*, Enterotoxigenic *E. coli* in ward 15; Atypical Enteropathogenic *E. coli*, typical Enteropathogenic *E. coli,* Enterotoxigenic *E. coli* and Enterohaemorrhagic *E. coli* in ward 18; Commensal *E. coli,* Atypical Enteropathogenic *E. coli*, typical Enteropathogenic *E. coli*, and Enterotoxigenic *E. coli* in ward 19. The prevalence of DEC strains on the toilet seats indicated a potential for disease transmission in these households.

Conclusion: The results showed high sanitation coverage in the study population of the three wards. Coverage provided a good indication of the challenges faced by the rural communities. Several factors such as poverty, lack of awareness and water shortage forced households to adopt unsanitary practices. This study has showed encouraging practices in the use of latrines and the utilization of latrines was satisfactory.

Keywords: Sanitation coverage, *Escherichia coli* (*E. coli*)