AN INVESTIGATION INTO RISK FACTORS ASSOCIATED WITH THE CHOLERA EPIDEMIC IN KWAZULU-NATAL DURING 2000.

By

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Abstract

Background: The cholera epidemic experienced in the province of KwaZulu-Natal between August 2000 and July 2001 resulted in 105, 000 reported cases of cholera and 220 human deaths.

Objectives: The primary objective of this study was to make comparison between districts with cholera and districts with no cholera in rural KwaZulu-Natal on the basis of known risk factors for cholera and diarrhoeal diseases. Comparison was made with regards to key factors such as the prevalence of diarrhoeal diseases, the provision of safe water supply, ownership and effective utilization of sanitary facilities, knowledge and practice on water purification and prevention of cholera.

Methods and materials: This was a descriptive, cross- sectional, ecological and comparative study among households of KwaZulu-Natal. The communities were stratified into two groups. One group had cholera (Group 1) and the other group (Group 2) had no cholera. Thirty communities were selected by systematic random selection from each of the two groups. From each community, eligible households were selected using simple random sampling technique. Trained field workers used a pre-tested questionnaire to collect data during the months of November and December 2001. Statistical procedures such as two-sample tests on means and proportions, Pearson's chi-square tests of association, odds ratios, binary logistic regression analysis, sensitivity tests, specificity tests and ROC (receiver of characteristics) analysis were used for data analysis.

Results: A total of 1420 households from both groups were included in the study. The response rate for Group 1 and Group 2 was 84%, 92%. Female respondents (70%) predominated male respondents (30%). Tap water supply was less common in Group 1 (54%) than in Group 2 (72%), ($p< 0.05$). A higher percentage of households in Group 1 (27%) used dam or river water compared

to Group 2 (20%) ($p<0.05$). Household knowledge on water purification by boiling was (71%) in Group 1 and (87%) ($p<0.05$) in Group 2. 38% of households in Group 1 practiced water purification by using disinfectant JIK. The corresponding figure for Group 2 was 50% ($p<0.05$). Groups 1 and 2 were similar with respect to ownership of toilets (84% and 85% respectively). Groups 1 and 2 showed a marked difference with respect to utilization of toilet facilities by all family members (70% and 89% respectively). The prevalence of diarrhoeal diseases for Group 1 was higher (14.3%) ($p<0.05$) than the Group 2 was (11.1%).
Factors found to be helpful for protection against diarrhoeal diseases were the boiling of water (OR=0.41, 95% CI, 0.19-0.90) and the use of disinfectant JIK (OR=0.45, 95% CI, 0.19-0.94). The study also showed that the use of dam or river water was significantly associated with diarrhoeal diseases (OR=2.92, 95% CI, 1.06-7.80).

Conclusion: The results showed that there was significant difference between the two groups of households in regards to basic provision of safe water, knowledge and practice of good hygiene, ownership and effective utilization of sanitary facilities. Findings from this study could be useful as baseline information for future planning, monitoring and evaluation of ongoing programmes.

DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the Degree Masters of Science in Epidemiology at the University of Pretoria, Pretoria. It has not been submitted before for any degree or examination in any other Technikon or University.

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ACRONYMS AND GLOSSARY

CFR	:	Case Fatality Rate
CHW	:	Community Health Workers
DOH	:	Department of Health
GIS	:	Geographic Information System
Group 1	:	Districts with cholera. (Lower Umfolozi, Eshowe/Nkandla, Ulundi, Stanger and Port shepstone)
Group 2	:	Districts without cholera (Pietermaritzburg, Durban, Ladysmith, Newcastle and Jozini)
HCW	:	Health Care Workers
Disinfected JIK	::	Trade name for Chlorine, active Product used the treatment of water
JOC	:	Joint Operational Committee (Interdepartmental committee e.g. Dept. of Water, Local Government, Education, Health Etc.)
KZN	:	KwaZulu-Natal
NGO	:	Non Government Organization
OR	:	Odds Ratio
95% CI	:	95% Confidence Interval
SADHS	:	South African Demographic Household Survey

VIP	:	Ventilated Improved Pit (latrine)
WHO	:	World Health Organization
EPR	:	Epidemic Preparedness and Response