

BACKGROUND:

The epidemiology and virulence properties of pathogenic *Escherichia coli* among food handlers in tourist destination hotels in Kenya are largely uncharacterized.

METHOD:

This cross-sectional study among consenting 885 food handlers working in nine luxurious tourist hotels in Nairobi, Kenya determined the epidemiology, virulence properties, antibiotics susceptibility profiles and conjugation abilities of pathogenic *Escherichia coli*.

RESULT:

Pathogenic *Escherichia coli* was detected among 39 (4.4%) subjects, including 1.8% enteroaggregative *Escherichia coli* (EAEC) harboring *aggR* genes, 1.2% enterotoxigenic *Escherichia coli* (ETEC) expressing both LT and STp toxins, 1.1% enteropathogenic *Escherichia coli* (EPEC) and 0.2% Shiga-like *Escherichia coli* (EHEC) both harboring *eaeA* and *stx2* genes respectively. All the pathotypes had increased surface hydrophobicity. Using multivariate analyses, food handlers with loose stools were more likely to be infected with pathogenic *Escherichia coli*. Majority 53.8% of the pathotypes were resistant to tetracycline with 40.2% being multi-drug resistant. About 85.7% pathotypes trans-conjugated with *Escherichia coli* K12 F(-) NA(r) LA.

CONCLUSION:

The carriage of multi-drug resistant, toxin expressing pathogenic *Escherichia coli* by this population is of public health concern because exposure to low doses can result in infection. Screening food handlers and implementing public awareness programs is recommended as an intervention to control transmission of enteric pathogens.