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**An occupational health risk assessment for exposure to BTEX: A case study of informal traders in a metro centre (taxi rank) in South Africa****Raeesa Moolla and M Dubazana**

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Many South African commuters use minibus taxis daily and are connected to the informal transport network through metro centres informally known as 'taxi ranks'. A taxi rank forms part of an economic nexus for many informal traders, where they work alone in designated areas along the periphery of the taxi rank. Consequently, informal traders are at potential risk of adverse health effects associated with the inhalation of exhaust fumes from the taxis. Of particular concern is a group of hazardous volatile organic compounds, known as BTEX (viz. benzene, toluene, ethylbenzene and xylenes). The BTEX compounds are known to have a high level of toxicity, both in acute and chronic exposure situations. Thus, an occupational health risk assessment for informal traders exposed to BTEX compounds was investigated. The health risk assessment included a questionnaire and three active sampling campaigns. The sampling campaigns were conducted using the synspec spectras gas chromatography 955 instrument. Results indicated that the average ambient concentrations were 8.46 ppb, 0.63 ppb, 1.27 ppb and 1.0 ppb for benzene, toluene, ethylbenzene and xylenes respectively; which were above acceptable South African Air Quality Standards (i.e. 8-hour-running-average). The daily variation of BTEX compounds also indicated increased benzene and xylene concentrations when ambient temperatures increased, a concern with future climate fluctuations. The average cancer risk calculated for the informal traders was  $9.46 \times 10^{-3}$ . Although this was an acceptable cancer risk, in a number of individual cases, there were incidences of unacceptable risk to the cumulative exposure of BTEXtotal.

**Biography**

Raeesa Moolla attained her PhD at the age of 30, at the University of the Witwatersrand, where she is now a tenured lecturer. Her research interests lie in hotspot monitoring and modelling of urban-scale air pollution and its impacts on human health; specifically related to VOC emissions and pollution from the transport sectors. She is also involved in surface and tropospheric ozone research; and is currently participating in the IGAC-led TOAR project. Dr Moolla currently has over 25 publications and conference proceedings to her name, with an additional five publications being reviewed by recognized peer-reviewed journals.

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