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Chemical composition of clay soil eaten by geophagic women of childbearing age and potential health risks: Experimental study in Tshwane District, Gauteng Province.

Mohora Feida Malebatja

Sefako Makgatho Health Sciences University, South Africa

Background: Geophagy is the deliberate ingestion of earthly materials such as chalk, kaolin, soil, clay, dirt, soft rocks, and sand amongst pregnant women and women of childbearing age in African countries such as South Africa. The chemical composition, toxicological aspects, and potential health risks of clay soil consumed by women of childbearing age are often not known and understood by the consumers. The practice of geophagy amongst women of childbearing age has been reported to be associated with detrimental health outcomes and risks such as iron deficiency anaemia, constipation, shortness of breath, maternal and childhood mortalities and morbidities, the low birth weight of the foetus, premature childbirth and children born with defects, neurological and central nervous system disorder, death, appendicitis, cancers, teratogenic risks and ulcers.

Method: An experimental study was conducted to examine the chemical composition of clay soils ingested by pregnant women and women of childbearing age in Tshwane District, Gauteng Province, South Africa. Thirty-nine clay soil samples were collected from study participants attending antenatal care services and family planning at public healthcare facilities of Tshwane District, Gauteng Province, and were subjected to biochemical analysis. The ICP Mass Spectrometer equipment was used to detect the chemical composition clay soil.

Results: The study detected 18 chemicals substances that were present in clay soil eaten by women of childbearing age of Tshwane in different concentrations. Amongst the detected toxic elements in clay soil, vanadium, manganese, chromium and barium were recorded at high quantities exceeding 100 mg/kg on average.

Conclusion: The practice of geophagy amongst women of childbearing age is toxic and should be discouraged.

Biography

Mohora Feida Malebatja currently working as a Lecturer and a Researcher at Sefako Makgatho Health Sciences University where I participate in teaching, learning, research, and community engagements. She is involved in the research supervision of students in the environmental health and science societal problems. She is presently pursuing PhD in Public Health at Sefako Makgatho University. She also holds Masters in Public Health from University of Pretoria, specializing in Environmental and Occupational Health and also holds Post Graduate diploma in Public Health from Sefako Makgatho University.