

**A comparative analysis of total mercury (T-Hg) content in cosmetic creams and Soaps
and in human hair in Dar es salaam**

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Master of Science (Environmental science)

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Cosmetic creams mercury has been available to the Tanzania public shops for many years. These mercurial cosmetic creams and soaps used by the African females are among the most useful products for skin depigmentation. The aim of this study was determine whether the use of these cosmetic creams and soaps resulted in excretion of excessive amounts to total mercury (t-Hg) in human hair. The total mercury content in cosmetic soaps and creams found in shops in Dar es salaam, and in the hair of people using and not using these cosmetics was determined. The study was conducted in Dar es salaam, a region which is supposed to be free from mercury pollution. Hair samples from twenty females, non-users of cosmetics and from twenty other females, users of mercury containing cosmetics were collected and analyzed for T-Hg content using Cold Vapour Atomic Absorption Spectrometry (CV-AAS). Thirty samples of both cosmetic creams and soaps were collected from shops in Dar es salaam and subjected to standard digestion procedures of the British Pharmacopoeia and then analyzed for T-Hg content using CV-AAS. The average T-Hg concentrations in the scalp hair of females using mercury based cosmetic creams and soaps ranged from 7.0 ± 0.4 to 880 ± 12 ppm. The highest T-Hg concentration were found in females who work in beauty hair salons and the lowest concentrations were found among students. The average T-Hg concentration in non-cosmetic users were found to be lower with values ranging from 0.57 ± 0.07 to 8.29 ± 1.22 ppm. Higher T-Hg concentrations were found in female subjects while lower concentrations were found in male subjects. The average concentrations of T-Hg in cosmetic soaps was higher than in cosmetics creams with values ranging from 0.11 ± 0.03 to 8665 ± 15 ppm and 0.16 ± 0.02 to 25.30 ± 4.2 ppm respectively. The World Health Organization (WHO) limits and the Tanzania Bureau of Standards (TBS) specifications for cosmetics. Females using their hair as compared to the non-cosmetic users, suggesting that the cosmetic users were being contaminated with the mercury from the cosmetics.