

An-Najah National University
Faculty of Medicine and Health Sciences



Graduation Project

**Breast Milk Cadmium Levels in Different Regions of the West
Bank of Palestine: A cross-sectional study**

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Abstract

Breast milk is a biofluid that can be easily extracted and examined. It is one of the body fluids that can reflect the body's exposure to heavy metals by assessing their concentration in the breast milk of high-risk lactating women. Cadmium is a highly toxic heavy metal that can pass to infants via contaminated breast milk. This can put the infant at risk for developing neurodevelopmental adverse effects.

Heavy metals exposure and concentration may have an association with some sociodemographic characteristics of participants. This study aims to assess breast milk cadmium levels and associated sociodemographic characteristics.

Breast milk samples were collected from lactating mothers in different regions of the West Bank of Palestine in metal-free polyethylene tubes. The coupled plasma-mass spectrometric (ICP-MS) technique was used to examine the specimens. A total of 160 breast milk samples were analyzed in addition to a self-administered questionnaire. The median breast milk cadmium level was $0.0002\mu\text{g/dL}$. Cadmium levels were significantly higher in women who consumed canned food ($p\text{-value} = 0.050$) and they composed of 84% of participants. Multiple linear regression results showed that regular consumption of dairy products was a significant predictor of lower breast milk cadmium levels ($p\text{-value} = 0.008$).

Keywords

Cadmium, heavy metals, breast milk, breastfeeding, exposure, Palestine