

## Consequences of Food Insecurity on Health, In Associated with Health Insurance and Food Assistance (Indonesia)

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### ABSTRACT

**INTRODUCTION:** The ranking of the Indonesian Human Development Index (HDI) 2017 has fallen compared to 1990. Health status is one of the dimensions of the HDI. The health degree of the Indonesian from life expectancy at birth tends to increase, but not all years are in good health. Health complaints data show that illness experiences tend to increase in the last two decades. Health problems become one of the consequences caused by food insecurity. The study aims to examine the consequences of food insecurity on health complaints and controlled by demographic and socio-economic characteristics (sex, age, area, education, drinking water, sanitation, and economic status), food assistance program, health insurance ownership and health facilities per density. **METHODS:** Indonesia household socio-economic survey conducted in March 2018 (1,131,195 individual samples), was analysed using multinomial logit method. **RESULTS:** The findings indicate that the population of moderate to severe food insecurity has a risk to experience severe health complaints more than 2 times of food secure level. The subsidized government's health insurance owner has a lower risk of health complaints than the non-subsidized government's health insurance. Food assistance programs can reduce the probability of health complaints in moderate-severe food insecurity level group and at least junior high school graduated. The Experience severe health complaints and outpatient treatment are higher at the moderate-severe food insecurity, living in rural areas, and non-subsidized government's health insurance. **DISCUSSION:** Health policy needs to be mapped according to food insecurity and affordability of health facilities.

**KEYWORDS:** health, food insecurity, health insurance, food assistance, multinomial logit

## Consumption of Manjakani Among Postpartum Mothers and Risk of Heavy Metal Contamination

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### ABSTRACT

**INTRODUCTION:** In Malaysia, herbal medicines are used for variety of reasons including health promotion and home remedies during pregnancy and postpartum. Among the available herbs, Manjakani is one of the most commonly consumed during this period and raised concerns over possible heavy metals exposure. This study aims to determine Manjakani consumption among postpartum mothers, and its heavy metals level, namely Lead (Pb), Cadmium (Cd), Arsenic (As) and Chromium (Cr). **METHODS:** This study involves comparative questionnaire involving 106 postpartum mothers. A sample of Manjakani was collected from six districts in Kuala Lumpur (Segambut, Seputeh, Cheras, Bandar Tun Razak, Bukit Bintang and Lembah Pantai). Samples were extracted using microwave digester and analysed in triplicates, totalling 18 samples using Inductively coupled plasma mass spectrometry (ICP-MS). Non-carcinogenic health risks for herbal medicine consumption were calculated using Hazard Quotient (HQ). **RESULTS:** Manjakani was consumed by 16% of mothers (n=17). No significance was found between jaundice and manjakani consumption. Highest level of the metals was shown by Cr with mean concentration of 4208.5±1906 ug/kg, followed by Pb (170.8±193.2), As (39.3±27.1) and Cd (7.7±0.76). following a decreasing order of Cr>Pb>As>Cd. There were no significant non-carcinogenic health risks depicting worst case scenario with Pb, As and Cd contamination (HQ<1). **CONCLUSION:** Heavy metals were quantified in Manjakani which raises concerns on safety for consumption during pregnancy or postpartum period. This warrants for further investigation on other frequently consumed herbs.

**KEYWORDS:** Manjakani, postpartum mothers, heavy metals exposure, non-carcinogenic health risk