



## Effect of Drinking Water on the Decrease of Blood Pressure in Hot Working Condition of Prison's Kitchen

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### Dear Editor-in-Chief

Hot working condition is the integration result among temperature, humidity, velocity of air movement, and hot radiation from the body's workers, which causes the decrease of systolic blood pressure with its complication (1). The kitchen is a place with hot working condition because there is process of cooking using the instruments producing hot radiation making the space of kitchen to be hot. A preliminary survey conducted in the kitchen of a prison on 20th Jun 2015 showed that environmental temperature was 31.6°C, which exceeds the threshold level (2).

Blood pressure in hot working condition is influenced by various factors including process change of physiological body, intensity of physical activities, characteristics of workers such as sex, age, nutritional status, drinking coffee and duration of working. In addition, physiological change of body is influenced by the balance between liquid and electrolyte (drinking water consumption) and coffee consumption (3). Provision of drinking water may be an effort to solve the problem in hot working condition applied in working place.

Drinking water consumption is associated significantly with the decrease of blood pressure in hot working condition (4). The question: Does drinking water consumption prevent the decrease of systolic blood pressure in hot working condition of the prison's kitchen? To answer the question, we conducted *before and after with control*

*study* (5) or one *group pretest and posttest design* (6) because the sample of control group was the same as the sample of intervention group. The number of population was the same as sample size namely 25. Analysis of two variables was conducted in two phases: 1) To prove the category proportion of each independent variable namely nutritional status, age, duration of working and drinking coffee habit that should not be different ( $P > 0.05$ ) between the workers who did not get intervention (control), and the group of workers who got intervention (drinking water consumption); and 2) To prove significant association between water drinking consumption and the decrease of systolic blood pressure ( $P < 0.05$ ).

The results were as follows: 1) The category proportion of each independent variable is not different between the group of workers who did not get intervention (control) and the group of workers who got intervention (water drinking consumption); 2) There is association between intervention of water drinking consumption and the decrease of systolic blood pressure: the category proportion of systolic blood pressure in the intervention group (40%) is less than the category proportion of systolic blood pressure in non-intervention (control) group (80%).

Since the design type of study was *before and after with control group*, the conclusion is as follows: The intervention of water drinking consumption

prevents the decrease systolic blood pressure. However, this present study is limited in a prison's kitchen, because there is no generalization to a larger population. Further same study in provincial and national levels should be conducted, before the government makes decision using water drinking consumption to prevent the decrease of systolic blood pressure in hot working condition of the prison's kitchen.

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