

# EFFECT OF KIDNEY BEAN YOGHURT ON IMMUNE SYSTEM AND SLEEP QUALITY AMONG ELDERLY IN YOGYAKARTA

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## ABSTRACT

**Background:** Sleep disorders are fairly common in older adults. As people get older, sleep patterns and habits change. As a result, people may have trouble falling asleep, sleep fewer hours, wake up frequently in the night or early morning, and get less quality sleep. Kidney beans, also known as red beans, are good for health. They help boost the immune system. They are also a great source of vitamins, minerals, proteins, dietary fiber and iron. They contain antioxidants that are beneficial to health. This study aimed to assess the effect of kidney bean yoghurt on immune system and sleep quality among the elderly in Yogyakarta.

**Subjects and Methods:** This was a quasi-experiment before and after with no control design conducted at Abiyoso Tresna Nursing Home for the elderly, Yogyakarta, from April to Mei 2018. A sample of 17 elderlies was selected for this study. The dependent variables were lymphocyte count and sleep quality. The independent variable was consumption of 200 ml kidney bean yoghurt per day for 14 days. Immune system was measured by lymphocyte count. Sleep quality was measured by Pittsburgh Sleep Quality Index (PSQI) with higher scores indicating worse sleep quality. The data were analyzed by paired t-test.

**Results:** Lymphocyte count after intervention (Mean= 28.89; SD= 7.09) was higher than before intervention (Mean= 25.96; SD= 7.41), and it was statistically significant ( $p= 0.006$ ). The sleep quality after intervention (Mean= 4.88; SD= 1.83) was lower than before intervention (Mean= 8.06; SD= 3.09), which is good and it was statistically significant ( $p= 0.001$ ).

**Conclusion:** Kidney bean yoghurt improves both immune system and sleep quality among the elderly.

**Keywords:** kidney bean yoghurt, immune system, lymphocyte, sleep quality, elderly

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