

# THE EFFECTIVENESS OF RED GUAVA JUICE AND GREEN BEANS EXTRACT TO IMPROVE HEMOGLOBIN LEVEL IN PREGNANT WOMEN IN KEDIRI, EAST JAVA

Dewi Nur Afifi, Friska Herlina

Diploma Program in Midwifery, Faculty of Health Sciences, Universitas Kadiri

## ABSTRACT

**Background:** The blood volume in pregnant women increases, but this volume of blood serum is larger than the growth of blood cells resulting in hemo-dilution that causes anemia. Red guava and green beans are vegetable that contain high levels of iron and vitamin C. It is hypothesized that either fruit can be used as non-pharmacological alternative to anti-anemia therapy. This study aimed to determine the effectiveness of guava juice and green bean juice to increase hemoglobin (Hb) level in pregnant women.

**Subjects and Method:** This was a quasi experimental study conducted in Ngasem Community Health Center, Kediri, East Java, from Januari 4 to 10, 2018. A sample of 32 pregnant women of last trimester was selected for this study by random sampling. This sample was allocated into the red guava juice group ( $n_1=16$ ) and green bean extract group ( $n_2=16$ ). The independent variables were red guava juice and green bean extract. The dependent variable was Hb level. Hb levels after treatment between the red guava juice and green bean juice were compared and tested by t-test.

**Results:** Before treatment, Hb level in the guava group (mean= 10.38; SD= 0.72) was comparable with the green bean group (mean= 10.48; SD= 0.81) with  $p=0.175$ . This means that at the baseline the Hb level of the two groups were about equal allowing valid comparison of the Hb levels after treatment between the two groups. After treatment, Hb level in the guava group (mean= 11.34; SD= 0.61) was also comparable with the green bean group (mean= 11.43; SD= 0.61) with  $p=0.679$ .

**Conclusion:** The effectiveness of red guava juice and green bean juice in increasing Hb level is comparable. The effectiveness of either red guava juice or green bean juice in increasing Hb level can not be established in this study because the design of this study had no placebo control group. It is recommended that a future study be conducted with an RCT design and placebo comparison group. From the current study, no valid recommendation can be provided to advise pregnant women with anemia to consume red guava or green bean juice.

**Keywords:** red guava, green bean, juice, hemoglobin, pregnant women

### Correspondence:

Dewi Nur Afifi. Diploma program in Midwifery, Faculty of Health, Universitas Kadiri. Jl. Selomangleng No.01 Kota Kediri, East Java, Indonesia.  
Email: afidewi@unik-kediri.ac.id. Mobile: 085255941010.