ABSTRACT

ANALYSIS OF THE EFFECT OF IRON AND PROTEIN INTAKE ON HEMOGLOBIN LEVELS IN WOMEN OF REPRODUCTIVE AGE

By

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Background: Anemia is a global public health concern, particularly among women of reproductive age (WRA). Anemia is characterized by low hemoglobin (Hb) levels. Iron is a key component in Hb synthesis. Protein helps in the absorption, transport and storage of iron. This study is aimed to describe the Hb profile among WRA, determine the proportion of WRA with inadequate iron and protein intake, and analyze the association between iron and protein intake on Hb levels in WRA.

Method: A cross-sectional study was conducted with multistage random sampling. The sample consisted of 83 undergraduate female students from the University of Lampung, consisting of 24 from the Faculty of Medicine and 59 from the Faculty of Mathematics and Natural Sciences in 2021-2024 academic years. This study was conducted in January-March of 2025. Iron and protein intake data were collected using Semi Quantitative-Food Frequency Questionnaire (SQ-FFQ), while Hb levels were measured via venous blood sampling.

Results: The study found that the proportion of anemic WRA was 67%; proportion of WRA with inadequate iron intake was 38,6%; proportion of WRA with inadequate protein intake was 30,1%. Based on the Mann-Whitney U Test, there was no significant association between iron intake and Hb levels (p = 0,141) and no significant association between protein intake and Hb levels (p = 0,190) among WRA.

Conclusion: No significant association found between iron and protein intake on Hb levels among WRA.

Keywords: Anemia, Women of Reproductive Age , Hemoglobin, Iron, Protein, Female Students of University of Lampung.

ABSTRAK

ANALISIS PENGARUH ASUPAN ZAT BESI DAN PROTEIN TERHADAP KADAR HEMOGLOBIN PADA WANITA USIA SUBUR

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Latar Belakang: Anemia merupakan salah satu masalah kesehatan global. Salah satu kelompok yang rentan anemia adalah wanita usia subur (WUS). Anemia ditandai dengan kadar hemoglobin (Hb) yang rendah. Salah satu komponen utama pembentuk Hb adalah zat besi. Protein berperan dalam penyerapan, transportasi dan penyimpanan zat besi. Penelitian dilakukan untuk mencari tahu gambaran Hb pada WUS, proporsi WUS dengan asupan zat besi dan protein kurang, dan melihat adanya hubungan asupan zat besi dan protein terhadap kadar Hb pada WUS.

Metode: Desain penelitian merupakan *cross-sectional* dengan teknik pengambilan sampel *multistage random sampling.* Sampel berjumlah 83 mahasiswi S1 Universitas Lampung yang terdiri atas 24 mahasiswi Fakultas Kedokteran (FK) dan 59 mahasiswi Fakultas Matematika dan Ilmu Pengetahuan Alam (FMIPA) dari angkatan 2021-2024. Penelitian dilakukan pada Januari-Maret 2025 di Universitas Lampung. Data asupan zat besi dan protein diambil melalui formulir *Semi Quantitative-Food Frequency Questionnaire* (SQ-FFQ), sedangkan data Hb diambil dengan metode pungsi vena.

Hasil: Berdasarkan penelitian, proporsi anemia pada WUS adalah 67%; proporsi WUS dengan asupan zat besi kurang adalah 38,6%; proporsi WUS dengan asupan protein kurang adalah 30,1%. Berdasarkan hasil analisis *Mann-Whitney U Test*, tidak terdapat hubungan antara asupan zat besi dengan kadar Hb pada WUS (p = 0,141), dan tidak terdapat hubungan antara asupan protein terhadap kadar Hb pada WUS (p = 0,190).

Simpulan: Tidak terdapat hubungan antara asupan zat besi dan protein terhadap kadar Hb pada WUS.

Kata Kunci: Anemia, Wanita Usia Subur, Hemoglobin, Zat Besi, Protein, Mahasiswi Universitas Lampung.