

Effects of dietary habits on red cell indices among female undergraduate students of the Faculty of Allied Health Sciences, University of Peradeniya

M.B.F. Farwin, S. Thilakarathne and H.M.T.U. Herath*

*Department of Medical Laboratory Science, Faculty of Allied Health Sciences,
University of Peradeniya, Sri Lanka
uthpalath@yahoo.com

Lack of nutrients in a diet can lead to a number of disorders in the body. Micronutrient deficiencies and nutritional anaemia are major problems, especially among children and women in South East Asian countries including Sri Lanka. This cross sectional study was performed among 95 female undergraduates studying in the Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka, in 2015. The objective of this study was to determine the effects of dietary habits on red cell indices.

Red cell indices were calculated using haemoglobin level, packed cell volume and red blood cell count which were determined by cyanmethemoglobin, microhaematocrit and counting chamber methods, respectively. A self-administered questionnaire was used to collect information regarding dietary habits. Descriptive statistical method, chi-square test, and independent sample t-test were used in the data analysis.

According to WHO standards, 30.5% (n = 29) of the current study population had normocytic normochromic (Hb < 12g/dl, MCV 80 - 100fl, MCH 27 - 32pg, MCHC 32 – 36%) condition and 6.3% (n = 6) had microcytic hypochromic (Hb < 12g/dl, MCV < 80fl, MCH < 27pg, MCHC < 32%) conditions. For MCV, MCH and MCHC 8.4%, 8.4% and 18.9% had lower values than the reference ranges while 4.2%, 10.5% and 5.3% had values higher than the reference ranges, respectively.

Less number of meals supplemented with meat, fish or eggs and high frequency of drinking tea per day showed a significant association ($p < 0.05$) with low MCV values ($p < 0.05$). Having MCH values lower than the reference range were significantly associated ($p < 0.05$) with low frequency of eating fruits and long duration (>5days) of menstruation. However, MCHC values did not show a significant association with dietary habits.

According to this study, the frequency of eating meat, fruits, drinking tea and the duration of menstruation demonstrate a significant impact on the red cell indices of this selected population. This warrants further studies on a larger population to validate these findings and eventually encourage the development of directed educational and nutritional programs.