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## Prevalence and Patterns of Anaemia in Adults of Anuradhapura District, Sri Lanka: A Cross-Sectional Study

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**Background:** Anaemia remains a significant global public health concern; however, data on its prevalence, typology, and contributing factors among Sri Lankan adults remain limited.

**Objective:** This cross-sectional study assessed the prevalence and types of anemia among adults in Anuradhapura, Sri Lanka.

**Methods:** Sociodemographic information and venous blood samples for full blood count were collected from adults selected using proportional sampling was completed in 16 out of 22 Divisional Secretariats. Anaemia was diagnosed and graded according to WHO hemoglobin thresholds, while red-cell indices were utilized to characterize the anaemia type. Iron deficiency anaemia (IDA) was identified using the Mentzer and Shine & Lal indices. Statistical associations were assessed using Student t-test, and odds ratios considering  $p < 0.05$  as significant.

**Results:** Among 352 participants (age mean $\pm$ SD: 46.6 $\pm$ 11 years), the majority were females ( $n=211$ , 60.3%) and rural residents ( $n=266$ , 75.6%). Anaemia was detected in 73 (20.7%), predominantly mild (67.1%,  $n=49$ ). Of the anaemic patients, 47.9% ( $n=35$ ) and 46.6% ( $n=34$ ) had hypochromic-microcytic and normochromic-normocytic anaemia, respectively. Anaemia was significantly more prevalent among females ( $n=54$ , 74%,  $p < 0.001$ ), particularly those of reproductive age ( $n=36$ , 66.7%, OR=1.72, 95%CI=1.019-2.902). Additionally, 22.7% ( $n=80$ ) with normal hemoglobin exhibited low mean corpuscular volume (MCV) or (MCH), suggestive of latent/ subclinical anaemia. Individuals with latent anaemia had significantly higher mean red-cell distribution width (RDW) ( $14.01 \pm 1.55$ ) compared to those with normochromic-normocytic anaemia ( $13.25 \pm 0.73$ ,  $p = 0.0049$ ) and normal individuals ( $13.61 \pm 0.98$ ,  $p = 0.014$ ). Moreover, Mentzer and Shine & Lal indices suggested IDA in 58 (79.5%) and 47 (64.4%) anaemic adults, respectively.

**Conclusion:** Anaemia is prevalent among one in five adults in Anuradhapura, particularly the females of reproductive age. The detection of latent anaemia among 22% and the identification of iron deficiency as the underlying cause in over 60% highlights the need for strengthened surveillance, precise aetiological assessment, and targeted nutritional interventions to address anaemia in this region.

**Keywords:** Adults, Anaemia, Anuradhapura