

Assessment of WHO hemoglobin color scale for accuracy in diagnosis of anemia among pregnant women by health care providers in peri-urban settings in Karachi

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Abstract

Diagnosis of anemia is commonly based on clinical examination which shows variable results. A non-invasive, low cost technique, WHO Hemoglobin Color Scale (HCS), could be utilized in primary health care settings to enhance the detection of anemia among pregnant women. The objective of our study was to measure the diagnostic accuracy of HCS and clinical signs assessment technique (CSAT) in diagnosing anemia against the gold standard of Laboratory Hemoglobinometry. We conducted a cross sectional validation survey comprising of 189 pregnant women from peri-urban settings in Karachi. Two maternal and child health centers (MNCH) from four towns (Gadap, Kemari, Bin Qasim and New Karachi) were included as study sites. Anemia was assessed by HCS method & CSAT, and compared with gold standard of laboratory hemoglobinometry. Around 72.7% women were diagnosed anemic by gold standard method. The sensitivity and specificity of HCS was 70.9% and 49.06% respectively while for CSAT: 95.7% and 5.66%. The positive (PPV) and negative (NPV) predictive values of HCS were 78.7% and 38.8% respectively while for CSAT: 72.9% and 33.33%. ROC curve analysis also showed the diagnostic accuracy of HCS method was better than CSAT ($p < 0.05$). The scope of HCS in diagnosing anemia seems to be limited but found to be better than clinical examination. Further research may be done to assess combinations of both parameters to optimize anemia diagnosis in resource poor settings.

Biography:

Dr. Khan is a public health academician and researcher, having more than ten-year experience of undergraduate and postgraduate teaching and research in Pakistan and Saudi Arabia. He is a graduate of Dow University of Health Sciences, Karachi and did his fellowship training in the subject of Community Medicine from Aga Khan University.

Speaker Publications:

1. "Quality of life and its predictors among Pakistani head of household in district Abbottabad, Pakistan".
2. "Level of satisfaction and its predictors among joint and nuclear family systems in District Abbottabad, Pakistan"
3. "Lead Content in 'Surma/Kajal Samples' from Japan, Pakistan and Saudi Arabia".
4. "Application of the GPS technology to assess time-location pattern of undergraduate students at a private medical university in Karachi, Pakistan: A pilot study".
5. "Strategies for Prevention of Road Traffic Injuries (RTIs) in Pakistan: Situational Analysis".

[10th European Epidemiology and Public Health Congress; Webinar – June 09-10, 2020.](#)

Abstract Citation:

Adeel Ahmed Khan, Assessment of WHO Hemoglobin Color Scale for accuracy in diagnosis of anemia among pregnant women by health care providers in peri-urban settings in Karachi, Euro Epidemiology 2020, 10th European Epidemiology and Public Health Congress; Webinar – June 09-10, 2020 <https://euroepidemiology.conferenceseries.com/2020>

